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SUCCESS OF YOUNG ADULT MALE RETARDATES.
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THE HABILITATION OF EDUCABLE MENTALLY RETARDED YOUTH WAS STUDIED TO DETERMINE THE EFFECTIVENESS OF PREDICTOR VARIABLES. TESTS AND INTERVIEWS BY QUESTIONNAIRES WERE MADE ON 5 GROUPS OF YOUTHS WITH 25 IN EACH GROUP. DATA WERE ANALYZED TO DETERMINE THE RELATIVE WEIGHTS OF EACH VARIABLE AND MEASURE. DIFFERENCES AMONG THE EXPERIMENTAL GROUPS WERE TESTED AND COMPARISONS MADE WITH THE CONTROL SAMPLE. CONCLUSIONS WERE--(1) PERSONALITY ASPECTS WERE INTERRELATED, (2) MEASURES OF PERSONALITY AND COGNITIVE ATTRIBUTES WERE VALID PREDICTORS OF SUCCESS, AND (3) EMR YOUTHS PARTICIPATING IN A TRAINING PROGRAM ACHIEVED AND WERE MORE SUCCESSFUL THAN THOSE WHO HAD LITTLE OR NO TRAINING. RECOMMENDATIONS WERE MADE TO MODIFY THE BATTERY OF PREDICTOR INSTRUMENTS FOR SCREENING USE AND EXPLORE THE RELATIONSHIP BETWEEN CHARACTER DEVELOPMENT AND SUCCESS. (RS)

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SUCCESS OF YOUNG ADULT MALE RETARDATES

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The members of the research staff appreciate the assistance received from all sources in the pursuit of this broad and comprehensive study of the adult male retardate.

John R. Peck

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PROBLEM

Introduction

The introduction provides an overview of the research beginning with a concise statement of the problem, and a definition of terms used throughout the presentation. The statement of the original problem is elaborated in two sections. The first section is concerned with the purpose of the research. The second section presents the theoretical orientation with which the writer approached the project and which, consequently, has influenced the subsequent formulation of hypotheses. The same theoretical orientation has influenced presentation of the methodological details of the project, the analyses of data, and the findings in the chapters which follow.

Purpose of Research

The research reported herein has been designed to test four hypotheses growing out of the literature about mental retardation as well as pertinent knowledge and theories of human development with reference to the relative "success" of habilitation among mentally retarded male youths. The design involved gathering several kinds of predictive--personality--and criterion--success--data from five sample populations, four of whom were experimental in nature (habilitation program graduates from Marbridge Foundation, State Schools, South Texas Habilitation Center, and Special Education Public School Classes). These four experimental groups of 25 subjects each were contrasted with a comparable control sample population of 25 subjects drawn from mentally retarded males who attended public schools that offered no special education vocational training.

With the foregoing sample in mind, the purpose of the research was set forth by asking a number of succinct questions. (1) Upon what did the success of educable mental retardates depend? Were personal, socio-civic, and vocational success separate aspects of individual functioning, or were they highly interrelated? (2) What clustering of personality and cognitive attributes existed in successful retardates? Were measures of these attributes useful predictors of success? (3) Did subjects who had habilitation training achieve greater success than those who had no training? (4) Were graduates of certain habilitation training programs more successful than were graduates of other programs?

Definition of Terms

Success was defined as a favorable or prosperous course, or termination of that which had been attempted. This implied the possession and utilization of general as well as of specific skills and attributes as criterion measures.

Mental retardation referred to subaverage general intellectual functioning which originated during the developmental period and was associated with impairment in one or more of the following: (1) maturation, (2) learning, and (3) social adjustment (Heber, 1959).[1]

Vocational success was defined as the ability to earn a living in an economically useful manner.

Socio-civic success implied the ability to achieve a sense of obligation to the community and of desirable community membership.

Personal success was the attainment of desired self-realization in one's private affairs and in person-to-person relations.

Definitions of all predictor and criterion variables included in the study are found in the Appendix. Included in each definition is a statement concerning the source of the data.

---

[1] The American Psychological Association form of footnote reference has been used.

A framework in the formulation of the predictive research problem was furnished by Murray's (1938) approach to personality assessment. His "personology" theory conceived of personality as an organizing force which reflected the enduring, recurring elements of behavior as well as the unduplicated elements. It was the presence of these enduring attributes which furthered interest in personality assessment as a predictive device. Relevance of Murray's theory to this study of mental retardates was promoted through his emphasis upon the physiological ground of personality, i.e., the importance of physical and biological factors in behavior. Also relevant was his emphasis on "regnant processes" (Murray, 1938, pp. 45-54) which, presumably, are less effective, or more disjunctive, in mental retardates. Ability and achievement were considered by Murray to be qualities which were important determinants of the motivational aspects of personality. He held it was a person's striving which bound together his personality traits and influenced the person's behavioral coordination or organization of activity.

Emphasis was placed on the collection of multiform data that could be reputed to reflect a wide variety of behavioral tendencies (Campbell, 1954; Cattell, 1957; McGuire, 1960; Masland, Sarason, & Gladwin, 1958; Murray, 1947; R. F. Peck & Havighurst, 1960). Focus on the unconscious and conscious sources of the motivational process reflected Murray's (1947) conviction that analysis of man's needs is necessary to understand human behavior, and there are motives of sufficient usualness to permit classification and use in appraising the behavior of persons in a specific group.

Like Murray, Sarason (1953) recognized the relation of basic needs to observed behavior. In addition, Sarason maintained that these needs and anxieties affect the successful functioning of the retardate just as they do the normal, but noted that validating evidence was lacking.

Guidelines for the examination of successful functioning were suggested by Cattell's definition of personality as "that which permits prediction of what a person will do in a given situation" (Cattell, 1950, pp. 2-3). Personality or predictor variables that were included in the present study and instruments with which to measure these variables were selected, developed, or adapted after the extensive review of research in this area, set forth in Procedure, was accomplished.

As a result, a set of carefully chosen variables that were regarded as basic to, and responsible for, the broad complexity of successful behavior was the crux of the system. The formula developed by McGuire (1960) for predicting behavior, and which provided for an interrelation of variables, was adapted for use in the research. The formula was:

others (b)

$$B_s = f\ (P_a, E_{a.b}, R_{a.b})\ S_a\ C_a$$

self (a)

Where:

B_s = successful behavior of the person (a) to be explained or predicted;

P_a = physical, cognitive, and personality attributes;

$E_{a.b}$ = attitudes and expectations of self (a) and others (b);

$R_{a.b}$ = reaction pattern and personality attributes as seen by others as well as character types (defenses displayed by self);

S_a = sex-role identification of the individual (a) and sex-typing of socialization pressures;

C_a = context of behavior including training institution and home environment.

Awareness that serendipity may dictate revision of the formula prevailed as heed was given Hobb's admonishment to "be alert to the occurrence of unexpected uniformities" (Hobbs, 1959, p. 234).

Hypotheses

Hypothesis 1

Discussions (Cohen, 1960; Dubrow, 1960; Kolstoe, 1960; Mann, 1959; Peterson & Smith, 1960; Toops, 1944) acknowledged that any viewing of success in life became multidimensional and involved consideration of various aspects which were frequently listed under the major headings of vocational, socio-civic, and personal success. After designation of the three aspects of the criteria it became necessary to determine what constituted a certain criterion --how best to bridge the gap from constructs or general statements concerning success to specific tangible behavioral units. In an effort to determine the variables to be included in the criterion--success--judgments and opinions of expert workers in the field of mental retardation were obtained directly from these experts by the investigator. Contributors in this pooling of judgments concerning the variables related to the criterion--success--were: Samuel A. Kirk, Samuel Levine, Cris De Prospo, Salvatore G. DiMichael, William Sloan, Louis E. Rosenzweig, J. E. W. Wallin, Max L. Hutt, Fred A. Schumacher, and William A. Fraenkel. The listing included 141 criterion--success--variables.

That such a comprehensive group of variables were mutually independent was problematic; therefore, a study was suggested to ascertain the interrelationships of these criterion variables. The hypothesis was:

1. The numerous variables which had been proposed by writers as criteria for personal, socio-civic, and vocational success could be represented by a

smaller number of common factors so that scores for "factors-in-persons" (Cattell, 1957) could be derived (criterion measures).

Hypothesis 2

A need existed to determine the personality constituents which were synthesized in successful functioning of the retardate (Sarason, 1953). Dubrow (1960) emphasized study of the self-concept of the retardate, Cassidy and Phelps (1955) directed concern to social skills, Macmillan (1962) held parent attitudes to be important, while Cowan and Goldman (1959) believed a need existed to determine the relationship of emotional development to success.

A present lack of personality measures developed for use with the mentally retarded made it necessary either to adapt or to develop a major portion of the instruments used in the study, and gave rise to one of the main purposes of the research, to validate personality measures for future use as screening devices in predicting the success of habilitation candidates. Instruments selected for use as predictors of success are listed in Procedure.

A representative set of predictor variables was required in order for the research to inspect the comparative magnitude of the relative validity of the instruments (Gulliksen, 1950). To accomplish this it was first desirable to determine what basic form of relationship was fundamental to the most effective and meaningful combination of predictor variables. The interrelationship of each predictor variable with other predictor variables formed the basis for the investigation. A maximum of information was obtained with the simultaneous consideration of the interrelationship of each criterion--success--variable with all predictor variables. The hypothesis was:

2. Scores on the measures used as predictor variables could be reduced to a set of "factor variables" which had significant positive relationship to the personal, socio-civic, and vocational success of the mentally retarded individuals studied.

Hypothesis 3

Development of desirable personality traits, communicative, interpersonal, and civic skills, moral values, and occupational training were viewed as areas for accentuation in a curriculum for the adolescent educable mentally retarded (Doll, 1958; U. S. Department of Health, Education, and Welfare Bulletin No. 28, 1959; Young, 1958). Provision was found generally for parent counseling in relation to the pupil's habilitation plan. Research to determine the effectiveness of these special class efforts to achieve socio-occupational adjustment had been scant, and findings of the studies frequently were contradictory (Johnson, 1962).

In the present research, data obtained from subjects for use in validating personality measures were utilized to determine if young adult male retardates who had received habilitation training achieved significantly greater success than those who had no habilitation training. Interest in the area corresponded with the present emphasis on training for the optimum utilization of human talent. The hypothesis was:

3. Mentally retarded youths who had pursued a program of special work training would obtain a higher degree of success (as defined above) than those who had entered employment without a program of special work training (comparison between Experimental and Control Groups).

Hypothesis 4

Unless predictive research took account of environmental variations and differences in educational experiences an important source for the understanding of factors which determined the nature and organization of different patterns of personality and potential for success was neglected (Guthrie, Butler, & Garlow, 1963; Malpass, Mark, & Palmero, 1960; Masland *et al.*, 1958; Reynolds, 1963). Inclusion in follow-up studies of variables determining the type of environment, institution or home, experienced by the retardate was recommended (Macmillan, 1962).

Four different retarded populations were studied in an attempt to determine what environmental conditions appeared to be most beneficial and to establish the relationship between the variables assumed to be indicative of success and the objectives and methods employed in the various training programs. The hypothesis was:

4. Differences in personal, socio-civic, and vocational success as determined by the derived criteria measures would occur among the four experimental groups of subjects.

RELATED RESEARCH

A review was made of relevant literature to determine the present status of research on the after-training success of young adult male retardates. Headings for the review conformed to the present study's four major lines of inquiry: (1) personal, socio-civic, and vocational success; (2) predictors of success; (3) training of mental retardates; and (4) comparison of habilitation programs. Under the fifth heading, factors-in-persons, there was discussion of the method of inquiry employed.

Personal, Socio-Civic, and Vocational Success

Although success was not generally conceded to be a unitary trait (Toops, 1944), the concensus of opinion was that personality attributes which determined vocational success in the mentally retarded also appeared to determine personal and socio-civic success (Mann, 1959; Peterson, 1959; Windle, 1961). That the three were interrelated was agreed, and because of this, consideration of one of these aspects of success demanded consideration of the other two as well.

McPhee and Magleby (1960) in an evaluation of success and failure in vocational rehabilitation's disabled clients held vocational success to be related to social adequacy, health, desirable educational record, stable marriage, healthy family relationships, desire for additional training, and satisfaction with employment goal. Categories for determining the degree of continuity of employment were:

1. Substantially employed, employed a minimum of ten months of year immediately preceding the interview, or employed 75% of period following initial placement.
2. Unsubstantially employed, employed a minimum of five and a maximum of ten months of the year immediately preceding the interview.
3. Minimally employed, unemployed for seven months or longer during the year immediately preceding the interview.

Peterson's (1959) study investigated the postschool adjustment of a group of mental retardates who previously were in special classes for the educable mentally retarded and compared their attainment with a group of normals of like chronological age; comparison was made on educational attainments, work characteristics, social activities, and civic responsibilities. Data were gathered by interview, entered on a 117 item questionnaire, and compared item by item for the two groups. Major differences which existed between the mentally retarded group and the normal group were:

1. Interval between termination of schooling and employment
2. Low job tenure
3. Only slightly over 50 per cent of group currently employed
4. Lack of knowledge concerning services afforded by vocational rehabilitation
5. Maintained substandard residences
6. Use of recreational facilities neglected
7. Greater number of law violations, including serious offenses
8. Few possessed records of military service
9. Frequently misused credit

Cohen (1960) in an analysis of 73 unsuccessful placements of 57 mental retardates presented evidence that one-third of the failures could be attributed to difficulty in community, rather than in job, adjustment. Investigation revealed that dismissal because of failure to possess skills demanded by job often related to difficulty with employer. On occasions, the employer's attitude toward, and concept of, mental retardation made job success difficult. Failure tended to combine with poor job attitude, absenteeism, lack of job responsibility, difficulty in adjusting to job environment, and problems at home. Failure because of sickness and parental objection to job plus the community's negative impression of the mentally retarded were listed as reasons over which the subject had no control.

Although a group who had received vocational training was found by Cowan and Goldman to achieve more effective adjustment than an untrained group, a need was noted "for more experimental evidence to establish the relationship of emotional development to vocational and social success . . . [in order for training to] be adjusted to fit the abilities and requirements of the individual . . . " (Cowan & Goldman, 1959, p. 83). No relationship was found between the effort utilized in locating employment and vocational success, which suggested vocational success could have been attributed to job placement rather than to training.

While effort was expended in defining required skills, Kolstoe (1960) reported scant quantitative information relating skills to successful employment. He suggested identification be made of the intellectual, personal, social, and vocational characteristics contributing to employment success or failure, and then these traits be quantified in order to ascertain the existing interrelations. Consideration of the following unanswered questions was recommended by Kolstoe:

> 1. Since IQ by itself is a poor predictor of vocational potential: Why? Is it too gross? Perhaps subscores are better. If so, which ones? Is it possible that several indices are necessary in making a prediction--for example, measures of social sensitivity, mobility, frustration tolerance, initiative? If so, how can we measure them and how much does each contribute to a predictive index?
>
> 2. Is it possible that employment of the retarded is highly specific--that is, is each placement unique? If so, what demands of the job must be considered before we can achieve a successful placement?
>
> 3. What are the specific causes of job failure? Have we been blaming personal habit inadequacy because we reallv have not been specific about failure? . . . Does use of leisure contribute? If so, what is a good use of leisure?
>
> 4. Many, many more questions need answers. For example, what family activities beget good employment potential? What family emotional relations? What educational experiences help and which harm, etc., etc. (Kolstoe, 1960, p. 30)

In a consideration of employability prediction by Kolstoe and Shafter (1961), a description of jobs successfully performed by mental retardates was advocated; included were stipulations concerning personal, social, and vocational skills. Classification of job description was to be determined by degree of complexity, and classification of the individual for employment was to be in the form of an evaluation of his skills and abilities.

Social adjustemnt and innate intelligence were viewed by Michael-Smith to be of equal importance in the prediction of job success of the mental retardates (1956).

Failure to achieve optimum use of potentialities was held to be due to the possession of, or the lack of, personality traits, desirable or undesirable, required in the job situation. Efforts for improvement were to be centered on that which has capacity for change, the personality, rather than on attempts to expand information possessed by the retardate. In a prediction study of the job success of subnormal workers, Michael-Smith attempted to determine the importance of fifteen personal characteristics (1956). Findings indicated training objectives should include development of efficiency, reliability, physical stamina, cautiousness, dexterity, memory, cooperation, motivation, emotional control, loyalty, and personal attractiveness. "In most cases valuable personality traits are related markedly to willingness to obey orders, and the willingness to cooperate" (Michael-Smith, 1956, p. 152), while ego strength and pride in achievement appeared to contribute to a positive form of motivation.

Inconsistencies which occurred between the potential and the obtained performance level were attributed by Dubrow (1960) to lack of emotional stability, physical energy, success in interpersonal relations, and ability to accept change. The study with competitive employment constituting the criterion revealed the following trainee characteristics to be desirable: (1) male, (2) minimum age of 22, (3) sound mental health, (4) acceptance of limitations, (5) realistic employment goal, and (6) past employment. The study recommended further examination of the trainee's self-concept and social adjustment and delineation of attributes basic to optimum functioning.

Strong support for a multiple dimensional viewing of success was lent by the above research, but the extensiveness of the multiplicity in turn raised the question: Could success be represented by a smaller number of basic factors? The research presented herein attempted an answer.

Predictors of Success

Understanding in the past of the mental retardate's successful functioning has been hampered by a tendency to focus on his intelligence in isolation from other personality characteristics rather than to attempt to determine the functional interrelations between a larger group of personality characteristics (Sarason, 1953). Studies by Brainerd (1954) and Dubrow (1960) found that tested IQ failed to differentiate vocational success from vocational failure. These findings were substantiated by work done by Cowan and Goldman (1959) which showed that unsuccessful cases in vocational rehabilitation did not differ from successful cases in intellect, chronological age, sex, or in school and work history.

What then, were the determinants of success for the mentally retarded? Goldstein (1959) maintained the answer was yet to be provided:

> . . . in the few studies that looked for a relationship between intellectual ability and occupational placement, factors other than intelligence emerged as being highly significant in their own right. Intelligence accounted for little of the predicted variance; just what the other factors are is still a matter of conjecture (Goldstein, 1959, p. 343).

Thurstone (1948) emphasized that the selection of personality measures was a psychological task, not computational, and required psychological insight. Related to this view was Jones' (1959) plea that theory must be developed as a guide to test construction.

Fundamental to Murray's "personology" theory (1938) was his conviction that an ultimate understanding of human behavior would be achieved through a complex study of the behavior of the individual. Techniques which permitted the use of imagination and fantasy were encouraged.

The necessity to "understand what is going on inside the person" was viewed by R. F. Peck and Havighurst (1960) as a prerequisite to personal assessment. Behavior could be predicted more accurately by knowing the personal world of the subject, a study of both "motivation, what he wants to do, and actual behavior, what he does" (R. F. Peck & Havighurst, 1960, p. 17). Self-concept, how a person explained and justified his behavior, or the individual's rationale, was viewed a useful predictor, as was the way one feels toward significant people in his life. Adorno's work

(Adorno, Frenkel-Brunswick, Levinson, & Sanford, 1950) established that attitudes toward parents influenced later attitudes to persons in authority. Therefore, the need to investigate the subject's attitudes toward self and others was indicated. The applicability of Peck's Sentence Completion, a projective device, to assess this area in the present study was considered feasible. Research reported by Sarason (1953) and Jolles (1947) showed that projective techniques provided useful information about the attitudes held by mental retardates, attitudes which were not expressed consciously. To further explore the possible predictive value of this type of instrument, Draw-A-Man, Mental Health, a projective technique which had provisions for the scoring and interpretation of results in terms of mental health was also included in the study.

Comparison of the predictive effectiveness of two types of techniques (Gallager, 1959), projective and self-report, was promoted by the inclusion in the study of three self-report personality inventories, Castaneda's Manifest Anxiety Scale (as adapted for use with the retarded by Lipman), Bown's Self-Report Inventory (as adapted by Stephens), and Brophy's General Satisfaction Scale (as adapted by Stephens).

Additional comparison of the predictive efficiency of various types of personality instruments was provided by the use of an observation technique, Interpersonal Impressions Rating Scale. An appraisal of observed behavior was provided through ratings on items related to six areas of personality development.

The belief that knowledge of the level of character development attained by a subject can be obtained through observational techniques was supported by findings reported by R. F. Peck and Havighurst (1960) and by Piaget (1960a).

A study of character development by R. F. Peck and Havighurst (1960) found that a person tends to maintain with persistence his sets or basic feelings toward life. Five character types or levels were offered by R. F. Peck and Havighurst as a scale of psychosocial maturation. The levels were incorporated into the above-mentioned Interpersonal Impressions Rating Scale for use in this study. The five character types were:

1. amoral--a person with inexact perception, paradoxical and nulifidian actions, and a childlike inability to govern these actions
2. expedient--a person who lived in the immediate present, who did not perceive the long-range results of his behavior, and possessed few moral inner directives
3. conforming--one who lacked self-direction, who consented to the dictates of his associates in a placid and uncensorious manner

4. irrational conscientious--described a person who ascribed to and maintained an unswerving life style which appeared to consist of strongly organized "don'ts" which determined his behavior
5. rational altruistic--a person capable of a continuing maturation, one who maintained rational control of his actions, who sought the well-being of self and others.

The five character stages presented by R. F. Peck and Havighurst were an elaboration of Piaget's theory (1960a) of a three-phase development of moral judgment. Piaget's levels were: (1) individual caprice or egocentrism, (2) social constraint, and (3) the equilibrium of agreement, cooperation, and regard for equity. Differences occurred between Piaget's and R. F. Peck and Havighurst's scales when R. F. Peck and Havighurst subdivided Piaget's first stage of character development, individual caprice, into two types--amoral and expedient--and when they inserted an additional stage, irrational conscientious, between Piaget's second and third levels.

In a study by Bobroff (1960) which utilized Piaget's developmental theory of rules and consciousness, the maturing process, i.e., behavior, thought, and ego development of both normal and educable retarded subjects, was found to progress through the same developmental sequence. The sequence followed the pattern set forth in Piaget's phases of moral judgment.

Thought organization or "grouping," which was viewed as being composed of such properties as associativity, synthesization, and reversibility, was utilized by Inhelder (Piaget, 1960b), an associate of Piaget's, in an investigation of the reasoning processes of mental retardates. The tasks utilized in the research successfully delineated three levels of retardation. In the belief that an indicator of reasoning ability was a useful predictor of success, Stephen's Listening Test of Vocational Aptitude was utilized in the present study. The test was purported to assess memory, reasoning, and application of knowledge.

Ability to maintain equilibrium as the environment became more complex was found by Piaget (1960b) to be determined in part by the level of cognitive development attained, and in part by moral judgment, the person's respect for rules, and his ability to modify these rules on a rational basis. The levels of cognitive development were ascertained by performance on (1) sensory-motor tasks, (2) operations which called for concrete thinking, and (3) operations which required formal thinking.

In line with Piaget's approach to cognitive development was research in the area of retardation by Jastak (Masland *et al.*, 1958) which established the value of assessing performance of retardates on tests of cognitive functioning. It could have been posited by Jastak that the cognitive factors defined by Guilford (1956b) through his studies of superior groups were not included in the cognitive structure of the mentally retarded. Instead, he addressed attention to the use of factor analysis to explore mental subnormality and, from research he conducted, concluded that a large number of mental functions, possibly 20 to 50, needed researching if a scientific analysis of subnormal functioning was to be achieved. In an effort to explore this area further, the present study included the following measures which were posited as being tests of cognitive ability: _Alternate Uses_, _Rhymes_, _Listening Test of Vocational Aptitude_, and as an acknowledgment to Kolstoe and Shafter's (1961) belief that in some jobs IQ may be the crucial factor, an individual intelligence test, either _WISC_ or _Stanford-Binet, Revised_ was used. Sensory-motor development was assessed by performance on _Discrimination Reaction Time_ and on _Dotting_.

Exploration of Doll's statement that "we should expect a relation of social maturation to social-economic status by way of their mutual relation to intelligence . . ." (Doll, 1953, p. 387) was made possible by inclusion in the study of (1) an instrument which afforded measures of social maturation, _The Vineland Social Maturity Scale_, and (2) a measure of socio-economic status, Index of Status Characteristics (McGuire & White, 1955). However, an effort to determine the relationship of the two instruments to intelligence was not the sole reason for inclusion; interest also has been reported in the predictive value of measures of social maturity (Cassidy & Phelps, 1955; Heber, 1959; Kennedy, 1948; Whitcomb, 1945) and of measures of social class (Kolstoe & Shafter, 1961) using success of retardates as the criterion.

"'Success' is seen as the end product of a process beginning with and having as an important determinant, parental attitudes to the retarded child" (Macmillan, 1962, p. 418). Because parental attitudes, particularly those of acceptance and rejection, have been found to be related to the social and emotional development of the retarded child (Cowan & Goldman, 1959; Michael-Smith, 1956; Worchel & Worchel, 1961), two instruments designed to appraise parental acceptance or rejection were utilized in the study. Worchel's Rating Scale for Child Concept, an instrument which measures the acceptance or rejection of the parent for the mentally retarded child, as reported by the parent, was one. The other was Fels' Parent Behavior Rating Scale, Acceptance-Rejection which measures acceptance or rejection as observed in the home by a trained interviewer.

Interest in the predictive value of data obtained from biographical information, physical characteristics, and vital statistics has been evidenced by Cowan and Goldman (1959) and by Lorge (1959). Therefore provision was made in the reported study for obtaining data on physical characteristics, school training, and other vital statistics by constructing interview schedules to elicit factual information on these variables.

In undertaking this study, the question asked was: Could this variety of predictor variables be reduced to fewer basic factors, and following this, what would be the relationship between these factors and personal, socio-civic, and vocational success? Or, in other words, there was a desire to determine the construct validity of the basic predictor factors.

Training of Mental Retardates

That habilitation training for the mentally retarded should promote personal adjustment, skill in the acceptable handling of interpersonal relations, and the ability to meet economic needs was generally accepted (Collmann & Newlyn, 1956; Doll, 1958; Kolstoe & Shafter, 1961; Young, 1958). The continuing increase of special classes was proof of the common belief that such training could best be accomplished in classes characterized by a homogeneous intelligence grouping of students and supervised by teachers with specialized training in this area of exceptionality. However, early studies by Bennet (1932) and Pertsch (1936) provided evidence that the academic achievement of these special class students was significantly less than that of mentally retarded students who remained in regular classes. Later findings tended to indicate, however, that mental retardates found a more favorable social environment in the special class. Johnson (1950) through the use of sociometric devices reported peer acceptance to be significantly lower for mental retardates than for normal students in the regular classroom. Rejection by peers increased as the intellectual potential of the student decreased. A subsequent study by Baldwin (1958) substantiated these findings. Again in 1959, Cassidy and Stanton reported retardates in a regular class showed superior social adjustment (Johnson, 1962). However, the significantly greater social adjustment of the special class was determined by performance in a sheltered situation, not from performance in the community environment. Neither group reached the academic expectations set for normal children. Thurstone (1959) noted mental retardates who were placed in regular classes did better academically than those with special class placement.

Ainsworth (1959) evaluated mentally retarded students in three types of school environment: special class, regular class with itinerant specialist, and regular class with no itinerant specialist. Significant academic progress was reported for all three groups, but differences between groups were not sufficiently high to indicate the superiority of any one of the three environments. Another study by Johnson (1961) disclosed no significant difference between regular class and special class retardates on scores of tests of personality, but the peer acceptance of retardates in regular classes was significantly less than those in special classes while reading and arithmetic achievement were significantly higher for the regular class group. Conclusive results were not obtained concerning the superiority of either of the two classroom environments, regular or special, in promoting desirable personal and social development.

Evaluation of the postschool adjustment of the mentally retarded also offered inconclusive results as to which of the two approaches was superior. A study by Baller (1936) and a follow-up later by Charles (1953) revealed no significant value in special education training. Effort was made in an early study by Kennedy (1948) to assess the community adjustment of a group of mentally retarded adults, approximately one-third had received extensive special education, one-third had received one year, and the remaining one-third had received no special training. Although the social adjustment Kennedy found agreed with that reported by the

Baller study, the economic adjustment Kennedy presented was significantly greater. An uncontrolled variable, job availability, appeared to influence the results of both studies. The Baller study was conducted during the depression era, whereas the Kennedy study was conducted during the years immediately following World War II, a period of high job availability.

A common fallacy in the research designs of reported studies was a failure to equate the two groups on variables that influenced the results (Johnson, 1962). Another was that standards for teachers with special training were not uniform. However, an additional error was noted in the method employed in obtaining sample subjects. Mentally retarded students selected as subjects for the control group often were obtained from regular classes in systems which also had in existence special education classes for the mentally retarded. The implication might have been that the special class group was possessed of characteristics, complicating physical and behavioral problems, which made their removal from regular classes desirable. In an effort to control for bias from this source in the present study, subjects chosen for inclusion in the control group were randomly selected from schools which had no special class for habilitation training for the mentally retarded in existence at the time these subjects attended school.

Ambiguous results from past research showed the need for continued questioning: Did retardates who had received habilitation training meet with greater after-training success than those who had no training?

Comparison of Habilitation Programs

Habilitation training programs for educable mentally retarded youths have been created in a variety of academic settings (J. R. Peck, 1958). Yet, little or no provision has been made to evaluate the effectiveness of the various programs (Syden, 1962). Studies of existing facilities for the habilitation training revealed that differences existed in screening procedures, curricula, counseling facilities, in-school work experience, on-the-job training, and selective placement (U. S. Department of Health, Education, and Welfare Bulletin No. 28, 1959).

Environmental variations appeared to influence personality characteristics. Malpass *et al.* (1960) reported a study in which institutionalized retardates obtained higher scores on the *Castaneda Manifest Anxiety Scale* than did retardates in public school special education classes. Using the *California Test of Personality* as a basis for comparison, Kern and Pfaeffle (1962) found special school children to have slightly higher scores than did special class children. Institutionalized subjects were found by Guthrie *et al.* (1963) to have a much more negative set of self-attitudes than did subjects who resided at home. Even though suggestions rather than conclusive evidence have been supplied, the question remained: If environmental variations experienced during training years influenced personality characteristics, did they also influence the degree of success attained in later life? A companion question was: Did differences in habilitation training programs influence the degree of success attained by graduates of these programs? An effort to answer these questions was made by comparing the success of the four subgroups of experimental subjects used in the present research, subjects randomly drawn from four different training programs.

Factors-in-Persons

To make emphasis on the concrete possible, a closer relationship was desired between theoretical postulates and experimental observations of predictors which had a measurable relation to criteria of success. Consequently, a method which utilized an objective procedure for ascertaining underlying variables or "factors-in-persons" was desired. A precedent had been set in a study reported by Mann (1959) which defined "life success" through a study of the factor pattern underlying variables assumed to be indicative of success.

The three major approaches to personality measurement suggested by Cattell (1950), the biographical record, the self-rating, and the objective test, were utilized in this study. Also utilized was Eysenck's method (1952) of criterion analyses which holds that the nature of the psychological factor must be hypothesized before data collection.

> Factor analysis as employed, among others by Thurstone (16) and more recently by Guilford (6), has served more than any other method to organize theoretical consideration of human aptitudes and abilities within the normal range of talent. Whether the same structure of factorial abilities would appear among mentally retarded has yet to be determined. Certainly this is a question worthy of investigation (Jones, 1959, p. 391).

Following Jones' suggestion, a taxonomy or classification of behavior was accomplished by the factor analysis of predictor variables (Fruchter, 1954). Criterion variables, those held by workers in the field to be measures of success, were also subjected to factor analysis. Then the relationship of these obtained personality factors to the criterion--success--factors was determined, thereby establishing the predictive ability or construct validity of the instruments utilized in the study.

After factor analytic methods established the basic factors present, scores for "factors-in-persons" (Fruchter & Jennings, 1962; McGuire, 1960) were obtained for each subject on each derived factor, both predictor and criterion. This procedure permitted the representation of a person through a profile of factors (Cattell, 1952). Because success was viewed as being multidimensional, not unitary, Toops (1944) held a profile of scores on various success factors was more stable and representative than unitary success scores. Also, different individuals probably possessed different patterns of success. Knowledge of these patterns was lost in a total success score. The ten expert workers in the field of mental retardation who contributed to this study their judgments concerning the variables related to the criterion--success--were also of the opinion that scores on success factors should be treated as a profile rather than attempting to assign arbitrary weights to subscores in order to arrive at one total success score.

PROCEDURE

This section sets forth a description of the procedures employed in the study. The description includes discussion of the method utilized in the selection of sample subjects, a description of variables, both criteria and predictor, and a review of the techniques applied to data gathering and data analysis.

Subjects

The sample of 125 was composed of 25 mentally retarded male youths randomly drawn from each of the following groups:

a. Graduates of Marbridge Foundation

b. Graduates of State School Habilitation Classes

c. Graduates of The South Texas Habilitation Center's Vocational Training Program

d. Graduates of special education classes of public high schools in Texas communities

e. A control group composed of males who attended public schools in Texas communities which offered no special education vocational training.

These male youths (N = 125) ranged from 18 through 26 years of age with intelligence quotients from 50 to 75 as determined by the L-M Revised Stanford-Binet Intelligence Scale or the Wechsler Scales.

The 25 male subjects who received habilitation training in the public high schools of Texas were drawn from a population, ages 18 through 26, IQs 50 to 75, who had participated in the cooperative program of Vocational Rehabilitation in Texas Public High Schools, and who had been placed on jobs (subjects who were termed "closures" by Vocational Rehabilitation).

Stratification of the control group was achieved by listing names of Texas communities with no special education facilities available at the time subjects now 18 through 26 years old were of public school age. From a listing of towns of over 100,000 population, Dallas (Oak Cliff), Waco, and Beaumont were drawn. Brownsville, Orange, and Texas City were drawn from a listing of Texas towns with populations between 25,000 and 100,000. Texas towns with populations of less than 25,000 were listed, and from these the town of Wallis was drawn. Distribution of total sample as determined by the size of community in which the subject resided is set forth in Table 1.

Cumulative records of junior high schools were utilized to locate persons who had estimated intelligence quotients from 50 to 75 on group achievement or group intelligence tests. From this list a random sample was drawn of pupils whose birth dates were from years 1936 to 1944.

TABLE 1

SIZE OF COMMUNITIES IN WHICH SUBJECTS WERE LOCATED[a]

Population of Community	Residence of Experimental Group	Residence of Control Group
Over 100,000 population	59	14
From 25,000 to 100,000	32	10
Less than 25,000	9	1
Total Subjects	100	25

[a] Residence of subjects included 39 Texas communities and one Oklahoma community.

Description of Variables

Criterion Variables

The research sought to determine the individual variables contributing to success and failure and to develop "factors-in-persons" under which both predictor and criterion variables were classified. Experts who contributed to the pooling of judgments concerning variables constituting success in most instances were in agreement that variables related to personal success included mental and physical health, mental maturity, general satisfaction and optimism, desire to achieve, self-concept, emotional stability, effective interpersonal relations, respect for authority figures, capacity for change, and skill in communication.

Among the variables related to socio-civic success were: personal property owned by the individual, conformity to the law, driver's license, credit rating, number of dependents supported by the subject, nature and amount of help received from social agencies, use of leisure, individual participation in civic activities, exercise of the right to vote, and residence (alone, relatives, half-way house, or institution). A partial listing of the variables involved in vocational success included: type and level of employment, job tenure, rate, reason for failure or change in job, adequate paying position, job satisfaction to the individual, ability to adjust to working conditions, initiative, care of materials and property, willingness to accept orders, and safety consciousness. The preceding enumeration of variables related to personal, socio-civic, and vocational success was presented as a representative, but not as a complete list of the 141 criterion variables involved. The total variables were incorporated into questionnaire forms for use in structured interviews with (1) subject, (2) subject's parent and/or the person with whom he lived, and (3) subject's job supervisor. Ratings were made on a five-point scale for each individual on 60 items covered in the structured interviews. Data were also collected on 20 numerical or continuous variables. Definitions of variables are included in the Appendix.

Sixty-one variables were mutually exclusive or dichotomous and were not amenable to five-point ratings. Ratings on these were entered under "yes" or "no" categories. Examples of mutually exclusive or dichotomous variables included: (1) Job Placement through (a) self, (b) employment agency, (c) vocational rehabilitation, (d) school counselor or teacher, (e) friends or relatives; (2) Employed at Present (a) yes, (b) no; (3) Use Credit (a) yes, (b) no.

Predictor Variables

The following intellectual, perceptual-motor, family status, and psychological measures of personality were selected for use as predictor variables, either as single indicators or as combined into factor variables:

1. Castaneda-McCandless Anxiety Scale as adapted for a mentally retarded population by Lipman and Belver (Lipman, 1959): Test-retest reliability for the CMAS over a one-week period averaged from .82 to .91 for boys and from .70 to .94 for girls

(Castaneda, McCandless, & Palermo, 1956). Phillips, Hindsman, and McGuire (1960), using factor analytic techniques, identified and described the following factors as those associated with anxiety (as measured by the CMAS): self-criticism and guilt, frustration with generalized aggression, effective verbal ability, anxious hostility toward school, anxious hostility toward age-mates, independent sociability and interests (girls only) and aggressive self-assuredness (boys only).

Lipman (1959) in adapting CMAS for use with mentally retarded subjects reported that pilot data agreed closely with normative data reported by Castaneda *et al*. (1956). Reliability coefficients for CMAS and Lie Scale are set forth in Table 2.

2. Peck's Sentence Completion, as adapted for use with mentally retarded male youths by Stephens, was a projective technique in which the individual's response to presented stimuli interpreted the reality of the outer world in terms of the reality the individual chose to see in the outer world. Stems were included which were designed to elicit responses in the following areas: family dynamics, attitude toward job and employer, interpersonal development, need achievement (motivation), and self-concept. Items were scored on a five-point scale.

TABLE 2

DATA GATHERED FROM PILOT STUDY TO DETERMINE RELIABILITY OF INSTRUMENTS[A]

INSTRUMENT	MEAN SCORE ON TEST	TEST SD	MEAN SCORE ON RETEST	RETEST SD	RELIABILITY COEFFICIENT
BOWN'S SELF-REPORT INVENTORY	31.92	5.06	32.20	5.21	.88
CASTANEDA-MCCANDLESS ANXIETY SCALE	18.64	8.56	18.12	8.78	.84
CMAS; LIE SCALE (SUBSCORE)	6.64	1.73	6.48	2.02	.49
DISCRIMINATION REACTION TIME	47.16	23.01	49.88	23.10	.76
DOTTING	164.80	64.58	163.08	56.99	.74
ALTERNATE USES	7.20	5.92	11.88	7.17	.88
RHYMES	9.00	7.57	11.20	8.86	.92
LISTENING TEST	13.56	4.76	14.04	4.81	.89

[A] SUBJECTS 16 THROUGH 26 YEARS OF AGE, IQ 50 TO 75, RANDOMLY SELECTED FROM HABILITATION TRAINING GROUPS AT MARBRIDGE FOUNDATION AND AUSTIN STATE SCHOOL (N = 25); INTERVAL OF 21 DAYS BETWEEN TEST-RETEST.

McClain (1962), in an effort to establish inter-judge reliability, had three judges rate protocols for need achievement. The reliability coefficient for judges one and two was .76, for judges one and three .79, and for judges two and three .78.

To determine the reliability for the five subscores of Peck's Sentence Completion, a pilot study was conducted. Subjects were 25 randomly selected mentally retarded male youths, ages 16 through 26, IQs 50 to 75, who were in habilitation training classes at Marbridge Foundation or Austin State School. Test-retest reliability coefficients computed from data gathered at 21 day intervals were: Family Dynamics .72, Attitude toward Job and Employer .89, Interpersonal Development .74, Need Achievement .82, and Self-Concept .76. Inter-judge reliability, based on ratings by two judges, was .85 for Family Dynamics, .82 for Attitude toward Job and Employer, .87 for Interpersonal Development, .85 for Need Achievement, and .94 for Self-Concept.

3. Bown's Self-Report Inventory, as adapted for mentally retarded young adults by Stephens, afforded a measure of the way the subject viewed self,

others, children, hope, authority, work, reality, and parents. In the development of the original inventory, twelve experts in the field of mental health sorted the items to assure the face validity of each item. The instrument was then administered to approximately 500 subjects, and an item analysis performed. Ambiguous items were eliminated. A further refinement, a factor analysis of the inventory, located items which were weak contributors to the factorial structure of the test. The inventory for mentally retarded young adults was adapted from Form R-3 which was composed of items which had a relatively high loading on its appropriate factor. The reliability coefficient was obtained from a pilot study and was set forth in Table 2.

4. The Vineland Social Maturity Scale developed by Doll (1953) was used to indicate relative aspects of social competence and to provide a means of evaluating the influences of environment. This scale was used to question the informants, usually the parents, and not the subject. Scoring was based on what a person did or did not do in six areas of social competence. Four subscores, communication, occupation, self-direction, and socialization, as well as the total score were utilized.

5. A Rating Scale for Child Concept by Worchel (1955) evaluated the acceptance-rejection pattern held by parents toward their mentally retarded child. The instrument was a modification of the Bill's Index of Adjustment and Values. J. R. Peck and Stephens (1960) obtained a correlation of .83 between the father's rejection as measured by A Rating Scale for Child Concept and the amount of acceptance-rejection found in the home as measured by the Fels' Parent Behavior Rating Scale. The correlation between the mother's acceptance or rejection and the acceptance-rejection found in the home was not significant. In a test-retest reliability study (14 day interval) based on the scoring of the Rating Scale for Child Concept by 20 parents, the reliability coefficient was .85 on measures of discrepancies between the mentally retarded child and "other" children, and .72 on measures of discrepancies between the mentally retarded child and the "ideal" child.

6. Index of Status Characteristics provided an index of status characteristics comprised of weighted values (McGuire & White, 1955) for dwelling area, house type, occupation, and source of income. Index values from the scale were transformed to

estimates of social status of the family in the community under the following categories: upper class, upper-middle and lower-middle class, upper-lower and lower-lower class. Each category contained three status levels. The index was postulated to be an indicator of variations in learning experiences, in pressures and reinforcements from members of the family, and in expectations held for the subject (McGuire, 1960).

7. The Interpersonal Impressions Rating Scale served as a supplement to, and a comparison of, interview questionnaires for (1) subject, (2) employer, and (3) parent. Items were rated on a seven-point scale and were adapted from Mental Health in Teacher Education Personality Rating Scales (R. F. Peck, 1962), Marbridge Foundation Individual Progress Chart (J. R. Peck, 1958), and R. F. Peck and Havighurst's Psychology of Character Development (1960). The 42 items comprising the scale were grouped under the following dimensions: (1) intellectual, (2) emotional, (3) interpersonal, (4) cathexis pattern, (5) performance, and (6) character and value orientation. Ratings were made by the interviewer and were based on impressions gained of the subject as he responded to measures employed as predictor

variables. Inter-rater reliability, based on ratings by two judges, was .76.

8. Brophy's General Satisfaction Scale, as adapted for use with mentally retarded adults by Stephens, was designed as a measure of general satisfaction based upon answers to four questions: (1) proportion of time respondent feels happy, (2) day-to-day personal satisfaction, (3) respondent's happiness as compared with other persons of the same age and sex, and (4) areas contributing to general happiness during the last two months. Analogous to questions on general satisfaction was a criterion variable, Job Satisfaction, which was based on questions similar in type to those contained in the General Satisfaction Scale (Brophy, 1959). Test-retest reliability coefficients (21 day interval) were: (1) General Satisfaction (Total) .82, (2) General Satisfaction (Unhappiness) .77, (3) Job Satisfaction (Total) .84, and (4) Job Satisfaction (Unhappiness) .77. Subjects were 24 mentally retarded male youths, ages 18 through 26, IQs 50 to 75, who were graduates of habilitation training classes at Marbridge Foundation or Austin State School.

9. Alternate Uses, as adapted for use with mentally retarded adults by Stephens, was purported to be a measure of spontaneous flexibility and of creativity (Guilford, 1959; McGuire, 1960). A list of objects and the use for which they were intended was presented to the subject; he was then required to list alternate uses that might be made of the objects, uses for which the objects were not originally intended. Reliability coefficient was obtained from a pilot study and was set forth in Table 2.

10. Rhymes, as adapted for use with the mentally retarded by Stephens, was a measure which required the subject to write words that rhyme with given words, and was purported to obtain scores on aspects of verbal facility or word fluency (Guilford, 1959). Table 2 listed test-retest reliability.

11. Dotting was a timed test which required that the subject place three pencil dots in each of a series of small circles, and was postulated to be a test of steadiness, rate of arm movement, and aiming or controlled manual movement (Fleishman, 1954). Test-retest reliability coefficient was presented in Table 2.

12. Discrimination Reaction Time was determined by the subject's ability to check an appropriate space as determined by the position of a white circle in relation to a black circle in a preceding square (Fleishman, 1954). The test was postulated to be a measure of spatial relations and psychomotor speed. The reliability coefficient was given in Table 2.

13. Listening Test of Vocational Aptitude by Stephens was developed as a listening test appropriate for use with young adult educable mentally retarded males. The three basic factors measured in the test were posited as being: (1) memory, (2) reasoning, and (3) application of knowledge. From a pool of working experiences considered by three expert judges to be appropriate to the job placements of young adult retardates, five individual paragraphs were developed, each concerned with a separate work area, and each containing directions and duties. One hundred mentally retarded male youths served as subjects in standardization and item analysis procedures. The paragraph and the questions following it were read to the subject, and the subject's responses were recorded by the examiner. Test reliability coefficient is set forth in Table 2.

14. Draw-A-Man, Mental Health utilized a scoring technique which permitted the instrument to be used as a predictor of vocational success and mental health. Meaningful portions of the drawing express degrees of agressiveness, anxiety, sexual adjustment, maturity, and stability. The technique yielded a total positive or a negative score. Two psychologists trained in assessment and in the area of mental retardation, scored 25 protocols. Inter-rater reliability was .97.

    Test-retest reliability coefficient was .88 for Draw-A-Man, Mental Health. An interval of 21 days was observed between the test and the retest. Subjects for the reliability study were 24 mentally retarded male youths, ages 18 through 26, IQs 50 to 75, who were graduates of habilitation training classes at Marbridge Foundation or Austin State School.

15. Fels Parent Behavior Rating Scale, Acceptance of Child determined the amount of acceptance or rejection held by the parent for the child as revealed by visits to the subject's home (Baldwin, Kalhorn, & Breese, 1949). Ratings made by the interviewer on a 90 millimeter scale permitted calculation of a numerical score.

16. Intelligence Quotient was obtained through the use of the Stanford-Binet, Revised or the Wechsler Intelligence Scale for Children. For Spanish speaking subjects, the Puerto Rican adaptation of the WISC, Escale de Inteligencia Wechsler Para Niños was employed.

In an effort to determine if information generally classified as "vital statistics" had predictive value, interview schedules were constructed which included questions designed to elicit factual information on health, medication, weight, height, moderate or severe handicaps, serious illnesses, years job training, age left home, and civic activities of family. Also questions concerning level of personality integration were adapted to a five-point rating scale; these were addressed to the subject (enjoyment of school and reason for leaving home) and to the subject's parents (level of aspiration, emotional control, and flexibility). Upon completion of the parent interview a rating was made by the interviewer on the internal stability of the parent's home.

Methods and Techniques

Data Gathering

Intelligence quotients were derived initially to determine if the subject qualified, i.e., possessed an IQ between 50 and 75, for inclusion in the study. Trained interviewers, psychologists with specialization in the area of mental retardation, administered the eleven personality instruments and a questionnaire form to each subject. The questionnaire was administered first because of value it was found to have in establishing rapport. Following its completion, responses were obtained on the personality instruments. Average interview time was from four to six hours per subject. Two separate appointments were required, and one or two rest periods were observed during each session.

Parent interviews averaged two hours in length and were conducted to obtain responses to the Vineland Social Maturity Scale, A Rating Scale for Child Concept, and the Parent's Questionnaire. For subjects who resided in halfway houses, the director of the house served as the parent figure. If parents were deceased, the relative responsible for the subject was interviewed.

As the confidential nature and the purpose of the interview were explained to the employer no reference to the subject's mental retardation was made. An average of 25 minutes was required to complete the employer's questionnaire.

The credit rating of the subject was obtained from the credit bureau in operation in the community, usually the Retail Merchant's Association, and the subject's success in the use of credit was scored on a five-point rating scale. After collection of data on a subject was completed, ratings were made by the interviewer on the (1) Interpersonal Impressions Rating Scale, (2) Fels Parent Behavior Rating Scale, Acceptance of Child, and (3) internal stability of the home.

Data Analysis

Prior to statistical analysis raw score data for all variables, both predictor and criterion, were categorized into three types:

1. point scale--those variables which were rated on a five- or seven-point rating scale
2. continuous--variables which had a numerical figure as an answer to a question, or as a total or a subscore for an instrument
3. dichotomous--variables with mutually exclusive categories, i.e., "yes" or "no" answers

Dichotomous variables failed to meet the assumption of continuous distribution, and, therefore, were not amenable to the statistical techniques employed in analyzing figure and continuous variables.

The frequency distribution of each point scale and continuous variable, both predictor and criterion, was analyzed through the use of a computer program which determined means, standard deviation, and critical ratios for skewness and kurtosis. All continuous variables were then transformed to stanine values with a range of 1 to 9, a mean of 5, and a standard deviation of 1.5. The method served to standardize scores.

The above transformation, and each subsequent statistical analysis, was performed through the use of a digital computer. The distribution of both the point scale and the linearly transformed continuous variables were normalized by means of the T-scale technique of Guilford (1956a).

Variables were factor analyzed and the factor scores computed for each subject on each factor extracted. The 21 factor variables derived from predictor scores were multiply regressed upon each of the 17 factor scores derived from the criterion variables.

In order to relate the dichotomous variables to the continuous factor scores, fixed effect models were used (Graybill, 1961; Ward, 1962). Two general models were employed: (1) for the dichotomous predictor variables and the criterion factor scores and (2) for the predictor factor scores and the dichotomous criterion variables.

To evaluate the hypotheses relating to differences among and between the groups, analyses of variance were carried out on both predictor and criterion variables. The chi-square method was used to analyze differences among and between groups on the dichotomous variables.

ANALYSES OF DATA

Results obtained from the tests of hypotheses are grouped under six major headings. First, tables of descriptive statistics for frequency distributions are set forth. Second, factor analyses of predictor variables and of criterion variables are followed by descriptions of resulting factors, rotated factor loadings, and modal weights for factor scores. Third, illustrative profiles of predictor and criterion factor scores are presented. Fourth, validation of predictor variables has three subheadings: (1) multiple regression (predictor factors regressed upon criterion factors), (2) fixed effect models (dichotomous variables and factor scores), (3) phi coefficients (correlations between dichotomous predictor and dichotomous criterion variables). Fifth, statistical analyses of variables to which the total sample did not respond are presented. Sixth, analyses of variance are presented for significant differences between the Experimental and Control Groups and among the four Experimental or Training Groups. Chi-square tables set forth differences between the two groups and among the four groups on dichotomous variables. Analyses of variance techniques are used to determine significant differences among the five groups, the Control Group and the four Experimental Groups.

Descriptive Statistics

A definition for every variable, whether predictor or criterion, included in the study is placed in the Appendix. Reference is also made to the source of information, subject, parents, or job supervisor.

Descriptive statistics were employed to permit the organization of data in a form that makes possible quantitative statements concerning the level of magnitude attained by the scores for each of the variables included in the study. These procedures also make it possible to determine the extent to which scores for one variable differ in magnitude and in distribution from scores for other variables.

The means, the standard deviations, and the critical ratios for skewness and kurtosis for all point scale and continuous predictor variables are shown in Table 3. The same statistics were computed for all point scale and continuous criterion variables and are set forth in Table 4. Critical ratio, the ratio of a deviation to a standard error, was computed after the procedure of McNemar (1955, p. 82). These statistics deal with the first four moments of the frequency distributions and show the essential features of the distributions. The highly significant results for the critical ratios pertaining to skewness and kurtosis indicated sampling distributions for many of the variables departed from normalcy, and

TABLE 3

DESCRIPTIVE STATISTICS FOR FREQUENCY DISTRIBUTIONS OF PREDICTOR VARIABLES

Predictor Variable	Mean	Standard Deviation	Critical Ratio for Skewness	Kurtosis
1. Mental health	31.50	12.79	-7.64	3.83
2. Physical health	4.10	0.86	-3.67	0.30
3. Frequency of medication	3.87	1.82	-5.14	-1.21
4. Enjoyed school	3.66	1.21	-3.58	-0.42
5. Reason left home	3.06	2.14	-1.90	-3.66
6. Optimum performance	3.69	1.25	-1.97	-2.81
7. Emotional stability	3.21	1.19	-0.53	-1.13
8. Cheerfulness	3.78	0.87	-1.10	-0.67
9. Adaptability	3.82	1.02	-4.07	0.92
10. Stability of family	2.75	1.32	0.08	-2.76
11. Perceptual awareness	3.88	1.34	-0.74	-1.61
12. Definite convictions	4.12	1.47	0.92	-2.10
13. Recognizes limitations	4.38	1.35	-1.04	-1.38
14. Written communication	3.42	1.52	0.47	-1.83
15. Self-esteem	4.02	1.12	-0.77	-0.78
16. Responsibility	3.94	1.40	-0.62	-1.64
17. Psychosexual integration	3.74	1.21	0.16	-0.48
18. Grooming	4.71	1.45	-1.54	-1.34
19. Dominant	3.29	1.20	0.84	-0.54
20. Sociability	4.38	1.46	-1.07	-1.38
21. Affectionate, kind	4.61	0.97	-0.05	0.29
22. Positive re father	4.64	1.25	-2.98	0.08
23. Positive re mother	4.62	1.21	-1.96	-0.31
24. Positive re men	4.95	0.91	-2.85	1.91
25. Positive re women	4.89	0.94	-3.46	2.33
26. Positive re children	4.90	1.17	-4.62	2.72
27. Cooperative	4.86	1.34	-5.03	1.71
28. Persistent	3.91	1.38	-0.63	-1.34
29. Strives for success	3.98	1.40	-1.10	-1.54
30. Handles failure well	3.69	1.36	-1.70	-1.36
31. Self-directing	3.58	1.41	-0.15	-1.48
32. Motivated by difficulty	3.69	1.29	0.66	-1.56
33. Responds readily	4.20	1.28	0.08	-1.15
34. Maximum performance	4.69	1.47	-1.73	-1.56
35. Amoral character	1.36	2.38	6.57	1.06
36. Expedient character	2.34	2.66	2.67	-2.85
37. Conforming character	3.46	2.37	-1.82	-2.86

TABLE 3--CONTINUED

Predictor Variable	Mean	Standard Deviation	Critical Ratio for Skewness	--Kurtosis
38. Conscientious character	0.51	1.46	12.65	14.73
39. Altruistic character	0.15	0.71	24.63	67.44
40. Integrated personality	3.85	1.35	0.37	-1.24
41. Enjoyment of life	3.81	1.09	-2.52	-1.29
42. General happiness	3.30	0.86	0.93	1.83
43. Degree of contentment	3.66	0.93	-1.97	0.98
44. Age	21.66	2.48	1.37	-2.10
45. Past places lived	1.28	1.89	19.12	55.36
46. Weight	155.14	27.46	4.08	1.32
47. Height	69.22	3.60	-0.88	0.98
48. Illnesses and accidents	0.76	1.27	19.35	57.64
49. Years schooling	9.52	2.73	-3.05	2.38
50. Years job training	1.04	0.96	8.49	10.70
51. Age left home	12.76	7.66	-3.64	-2.00
52. Number of handicaps	0.74	0.86	3.82	-0.82
53. IQ	63.26	7.30	-0.47	-2.22
54. Lack of anxiety	22.02	6.36	-1.54	-1.51
55. Truthfulness	6.59	2.44	0.08	-2.25
56. Range of attention	9.14	2.76	-2.59	2.18
57. Applies reasoning	3.82	1.23	-4.03	-0.06
58. Reaction time	60.55	11.95	-11.30	16.04
59. Psychomotor speed	203.26	49.34	-9.75	10.61
60. Verbal facility	9.64	8.57	4.09	0.34
61. Unhappiness	6.20	4.78	5.46	3.39
62. Creative fluency	9.18	5.92	2.43	-0.24
63. Creatife flexibility	3.44	3.84	8.51	11.25
64. Creative frequency	2.77	3.40	7.18	5.70
65. Practical creativity	0.14	0.52	18.29	37.10
66. Creative elaboration	0.14	0.49	16.94	32.01
67. Draw-A-Man, Mental Health	-5.47	4.04	0.06	-.63
68. Parent's activities	0.62	1.45	12.98	18.64
69. Index of social class	11.71	2.84	-4.28	1.92
70. Family dynamics	3.31	0.38	-1.47	-1.27
71. Attitude, job and employer	3.41	0.48	-1.47	-0.27
72. Interpersonal development	3.31	0.36	-0.05	-0.70
73. Need achievement	3.24	0.46	-1.30	-0.80
74. Self-concept	2.92	0.28	-0.45	0.40
75. Self-direction	90.93	29.65	42.51	217.91
76. Occupational maturity	86.48	10.65	-2,05	-0.36
77. Communicative maturity	78.82	7.33	-1.16	0.89
78. Social maturity	80.64	11.82	2.18	-1.85

TABLE 4

DESCRIPTIVE STATISTICS FOR FREQUENCY DISTRIBUTIONS OF CRITERION VARIABLES

Criterion Variable	Mean	Standard Deviation	Critical Ratio for	
			Skewness--	Kurtosis
1. Residence	1.97	0.83	6.43	8.10
2. Spare time activities	3.93	0.54	-3.05	5.26
3. Music enjoyment	4.59	0.62	-6.64	4.25
4. Law conformity	3.96	1.38	-4.18	-1.48
5. Driver's license	2.82	1.40	3.29	-2.58
6. Credit rating	2.92	0.66	-3.57	13.24
7. Improved financial state	3.39	1.46	-1.56	-3.05
8. Purchases own clothing	4.02	1.45	-5.53	-0.16
9. Job expectancy	2.72	1.48	1.01	-3.03
10. Regard for supervisor	4.22	0.84	-7.23	8.41
11. Compatible employees	4.36	0.86	-7.72	7.50
12. Realistic goals	3.84	1.04	-3.73	0.46
13. Advancement possibility	2.54	1.18	0.75	-2.08
14. Job in training area	2.44	1.35	2.38	-2.17
15. Exercises right to vote	1.25	0.80	16.04	27.12
16. Finances from parents	3.26	1.64	-0.50	-3.87
17. Parents regard as mature	3.89	1.10	-3.80	-0.25
18. Self-assurance	3.54	1.21	-2.17	-1.70
19. Skill with finances	3.30	1.36	-0.91	-2.70
20. Education aided success	4.14	1.21	-6.24	1.86
21. Respects authority	4.52	0.85	-9.55	10.26
22. Follows orders willingly	4.12	1.08	-5.20	1.34
23. Meets new people	3.94	1.10	-4.40	0.95
24. Maintains friendships	3.93	0.99	-4.77	2.50
25. Mature manner with girls	3.99	1.18	-4.50	0.00
26. Leadership ability	2.02	1.08	3.58	-0.52
27. Dependability of son	3.33	1.39	-1.58	-2.63
28. Son requires assistance	2.78	1.30	1.15	-2.46
29. Desire more independence	3.50	1.29	-0.74	-3.36
30. Source of pleasure	3.67	1.01	-2.38	-0.23
31. Source of trouble	3.69	1.15	-2.77	-0.59
32. Aid from social agencies	4.54	1.05	-10.17	8.71
33. Satisfied with son's job	3.34	1.39	-1.33	-2.78
34. Reason jobs terminated	3.46	1.60	-1.68	-3.45
35. Enjoy job responsibility	4.29	1.12	-7.87	5.74
36. Initiates activity	3.08	1.56	-0.78	-3.32
37. Health and stamina	3.85	1.01	-4.00	3.63

TABLE 4--CONTINUED

CRITERION VARIABLE	MEAN	STANDARD DEVIATION	CRITICAL RATIO FOR SKEWNESS	KURTOSIS
38. Performance under pressure	2.58	0.93	-0.46	0.52
39. Handles company money	1.46	1.03	9.53	8.20
40. Trained for present job	2.43	1.30	1.98	-1.73
41. High performance level	3.49	1.45	-2.18	-2.14
42. Sacrifices leisure	4.05	1.37	-6.47	1.97
43. Consistent worker	3.41	1.36	-2.62	-1.49
44. Neatness	3.51	1.13	-1.20	0.11
45. Accepts responsibility	3.10	1.34	-0.24	-2.08
46. Enjoys helping others	4.12	1.22	-7.12	4.16
47. Obeys orders willingly	3.77	1.09	-3.29	1.24
48. Relates to employees	4.11	1.14	-6.62	4.40
49. Careful on job	3.27	1.31	-1.45	-1.89
50. Proceeds independently	3.18	1.53	-1.55	-2.87
51. Job attendance	3.97	1.33	-6.21	1.94
52. Punctuality	4.26	1.15	-8.52	7.05
53. Politeness to customers	4.06	1.12	-5.92	3.87
54. Makes usable suggestions	2.13	1.28	3.28	-0.93
55. Safety conscious	3.34	1.33	-2.51	-1.18
56. Cares for property	3.55	1.29	-3.19	-0.18
57. Evaluation by employer	3.12	1.34	-1.84	-1.76
58. Job happiness	4.20	0.96	-7.65	7.06
59. Job contentment	3.41	0.92	1.24	0.09
60. Job satisfaction	3.67	1.08	-1.70	-1.54
61. Past residences	1.24	1.89	19.24	55.72
62. Hours spent viewing TV	14.31	12.10	6.11	7.90
63. Days outdoor recreation	5.15	7.25	9.01	7.55
64. Movie attendance	3.34	4.40	17.18	44.35
65. Time spent reading	2.34	4.18	18.24	44.74
66. Amount of savings	193.25	748.51	27.28	86.14
67. Amount of indebtedness	122.49	432.92	25.06	72.44
68. Number of close friends	5.52	5.54	9.36	10.32
69. Training-to-job interval	1.82	4.09	16.70	33.20
70. Average job tenure	9.38	11.46	10.35	11.85
71. Hourly earnings	0.83	0.52	7.69	19.06
72. Annual earnings	1189.26	1007.10	6.19	5.06
73. Hours spend in meetings	0.16	0.54	20.82	55.64
74. Days spent with parents	20.19	13.54	-3.14	-3.35
75. Hours worked with parents	11.33	26.36	22.04	62.88
76. Hours in church activity	5.58	10.25	23.72	75.98
77. Hours helping at home	6.44	7.32	10.20	15.18
78. Hours employed per week	32.07	18.94	-2.86	-1.64
79. Number of dependents	0.20	0.67	18.56	39.86
80. Job unhappiness	4.02	4.20	7.30	5.34

normalizing transformations were needed. The T-score technique of Guilford (1956a) was used to normalize and standardize all point scale and continuous variables. The reduction of raw score data to standard scores facilitated variance, factor analytic, and multiple regression analyses using high-speed computer equipment.

Factor Analysis

Factor analytic techniques were employed to determine whether the numerous variables included in the study could be reduced to a smaller number of common factors, more fundamental in nature than the original variables, and also to observe the basic dimensions or the relationships between variables. The fact that there are 78 predictor variables and 80 criterion variables in a study which has 125 randomly selected subjects is acknowledged. The population of subjects who have received vocational training is small; therefore, it is impossible to maintain the ten-to-one ratio between subjects and variables considered desirable in factor analytic studies (Fruchter, 1954). It is remembered, however, that the stability of the factor structure is a function of the number of subjects that determines the original correlation coefficient. Knowing that the standard error of zero correlation for the two sample sizes, 125 and 800, is similar (.09 for 125 and .04 for 800), decision was made to group all

78 predictor variables in one matrix for factor analysis. All 80 criterion variables were grouped in another matrix for factor analysis.

Matrices were factored by the principal-axes method, a method in which each factor extracts the maximum amount of variance and gives the smallest possible residuals, thereby condensing the correlation matrix into the smallest number of orthogonal factors (Fruchter, 1954, p. 99). Computed communality estimates were used in the diagonals. The highest zero order correlation coefficient was used as an estimate of the communality. Rotation of the axes to a meaningful, interpretable position was achieved through the use of the Varimax Rotation Method of Kaiser (1959). Only those factors with a loading of .25 or greater were chosen for rotation. After rotation, certain factors whose major loadings were negative were reflected in order to maintain a positive orientation in terms of interpretation and later analysis. Since results of these analyses were to be used in later tests of hypotheses, all relevant scores were included to maximize predictive value.

An appropriate weighting of each subject's scores on each of the original variables made possible the computation of factor scores. These weighting coefficients were obtained by multiple regression. Separate weighting coefficients or modal weights were derived for each factor, and from these factors scores were computed using the method outlined by Fruchter and Jennings (1962, p. 262). These factor scores were then used in multiple regression models which permitted validation of predictor instruments against the criterion--success.

Predictor Factors

Factor analytic methods determined ways the 78 predictor variables reduced and combined to explain and predict with some precision and confidence the criterion--success. Table 5 presents loadings for 21 factors derived from 78 continuous and point scale predictor variables together with the communalities of the variables. Modal weights for the derived factors appear in Table 6.

To facilitate analysis of the structure of factors, Table 7 presents each factor in the order of its extraction. The tentative predictor factor name is followed by four headings: (1) factor loading, amount of variance contributed by a variable to the structure of a factor; (2) modal weight, used in determining the weighted combination of variables included in the matrix which best predict the factor score for each person; (3) Eigenvalue, sum of the amount of variance which every variable in the matrix contributes to the structure of the factor ("the strength of the factor"); and (4) factor prediction accuracy, a multiple correlation coefficient. "R," which uses the individual variable scores to predict a factor score and to indicate prediction accuracy.

TABLE 5

ROTATED FACTOR LOADINGS FOR 78 PREDICTOR VARIABLES[a]

Predictor Variable	1	2	3	4	5^b	6^b	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21^b	h^2
1. Mental health	19	13	24	00	20	04	01	06	03	09	02	-27	50	-05	05	-03	-11	09	05	10	04	52
2. Physical health	02	02	-07	13	02	04	15	-16	05	-15	-11	-02	26	15	-17	12	04	-08	33	18	08	40
3. Frequency of medication	12	-06	07	-09	-08	-14	03	-05	-02	07	03	08	-03	-04	-02	-03	-09	00	54	02	-03	38
4. Enjoyed school	-08	05	04	-05	-02	02	-03	01	00	-05	-09	-56	-04	03	-05	01	04	-05	-07	-03	01	35
5. Reason left home	16	03	11	-02	-24	05	03	-06	78	-04	-05	-02	-04	-01	08	-01	-02	15	11	-05	-07	77
6. Optimum performance	17	06	08	-63	-11	-25	-07	31	04	-04	04	-10	03	-12	-13	32	23	04	34	08	09	55
7. Emotional stability	21	-03	-06	-59	09	04	00	10	-03	-02	-10	-06	11	-07	-01	31	09	-12	-14	-10	01	59
8. Cheerfulness	26	-04	09	-38	-10	-20	04	12	05	03	06	-11	21	-03	07	37	20	-04	03	-07	-02	54
9. Adaptability	10	-01	-02	-04	13	02	01	06	-05	00	06	-01	06	01	04	49	-02	04	-02	-01	01	28
10. Stability of family	15	10	67	05	-04	00	00	03	00	-07	09	-09	09	-07	14	02	-18	16	-06	18	03	64
11. Perceptual awareness	65	06	05	-03	21	-08	12	13	-02	-09	07	-19	-02	-16	03	02	-07	04	07	-11	-08	62
12. Definite convictions	07	49	-09	-06	10	08	31	24	16	-10	08	15	08	-05	07	18	-09	-09	-11	-15	10	60
13. Recognizes limitations	28	-16	03	05	10	-03	00	-08	-01	-03	-13	13	03	11	-12	-18	-48	11	09	-02	-02	46
14. Written communication	04	57	-05	03	09	-06	-11	09	-01	00	10	-10	-02	-11	05	-12	14	08	02	03	-05	44
15. Self esteem	20	-02	34	-10	-05	-04	47	15	-11	15	-01	08	18	-03	18	09	01	-11	-02	-18	01	58
16. Responsibility	78	07	17	-17	-01	-07	01	15	14	-12	08	14	13	00	-01	-01	-08	-02	02	-02	-01	79
17. Psychosexual integration	14	05	02	-16	-08	04	25	33	21	-19	30	-03	17	-21	-07	-03	03	-04	11	-12	22	56
18. Grooming	25	06	15	-02	-05	04	-03	41	05	11	-09	04	-13	-23	00	12	-16	-05	-15	15	18	48
19. Dominant	24	23	-03	-11	-10	-04	26	21	09	-04	06	25	48	-03	12	04	04	-17	16	03	11	64
20. Sociability	22	15	04	-04	07	27	71	13	-01	-04	10	-04	-02	08	06	05	06	10	05	-08	02	72
21. Affectionate, kind	36	-02	24	-25	15	13	35	17	-04	-05	12	-14	-16	09	-05	06	15	25	-02	-16	-05	63
22. Positive re father	16	-13	68	-18	13	08	10	-06	09	00	11	02	-11	-04	-05	06	00	-09	-06	03	-06	63
23. Positive re mother	22	-06	61	-05	-11	-08	12	06	02	01	-05	04	00	-02	08	-04	16	-06	20	-20	03	59
24. Positive re men	26	-11	63	-20	07	04	16	08	11	23	02	-06	08	16	-15	06	07	-04	02	-08	-16	72
25. Positive re women	37	01	40	-16	-15	18	23	08	-01	33	09	-06	13	03	-15	04	-02	-04	05	-10	-04	61
26. Positive re children	19	-04	42	04	10	-01	-01	00	05	06	17	-17	16	05	-10	-14	-03	26	21	-10	03	48
27. Cooperative	69	-12	30	00	07	09	07	23	05	02	04	-06	01	19	-02	07	06	08	-01	15	03	73
28. Persistent	82	10	09	-05	-07	-06	-12	06	05	01	-18	14	-04	06	00	10	05	-03	03	04	05	80
29. Strives for success	82	09	08	-14	-02	-12	01	08	08	-03	-24	15	-05	-06	07	06	14	-06	08	01	-06	85
30. Handles failure well	78	02	13	-07	-03	-04	16	-10	-07	-02	13	-18	-04	-06	01	-12	-09	04	05	-03	-01	75
31. Self directing	75	05	11	-20	-14	-10	05	19	18	-01	-04	17	19	-01	-02	12	-16	-07	10	-06	00	84
32. Motivated by difficulty	70	08	08	09	-07	-03	19	-05	04	13	00	04	05	-15	-01	-14	-06	02	04	00	09	64
33. Responds readily	18	12	16	-10	15	-05	65	03	-05	-05	-04	07	-03	-12	06	-09	-05	00	04	11	-03	59
34. Maximum performance	74	-13	-01	00	11	02	14	13	02	15	07	-02	05	-06	-04	14	04	-09	02	-02	-09	69
35. Amoral character	-23	06	-36	03	10	-06	03	-09	-15	-05	15	05	-26	34	-10	08	03	04	00	-11	-22	52
36. Expedient character	-13	04	-32	-08	40	-09	02	02	-15	-09	-18	-09	01	-02	-03	05	08	-22	23	-04	-02	49
37. Conforming character	48	-06	45	-06	-11	05	-06	05	03	08	-04	-06	01	-12	-01	01	-02	08	-24	08	29	64
38. Conscientious character	29	00	21	-02	-02	-01	03	43	-04	-05	08	04	02	-20	00	-10	15	01	-03	-02	-24	46
39. Altruistic character	17	06	17	-01	-08	-05	08	38	12	03	14	10	12	-14	-06	16	-04	16	02	11	-15	39
40. Integrated personality	67	-09	31	-12	02	09	23	18	02	04	09	-13	06	-11	-11	08	11	-07	-05	-05	15	77
41. Enjoyment of life	14	-14	21	-46	-17	05	11	09	-08	23	16	03	27	-06	-07	04	01	-03	10	14	-04	54
42. General happiness	07	-04	18	-58	-15	09	06	-05	12	08	11	-04	06	-05	02	-10	07	11	10	-11	-02	50
43. Degree of contentment	05	06	-07	-46	-06	-17	22	07	-03	05	-20	-07	22	02	-06	06	-07	18	13	07	12	48
44. Age	-03	06	-01	11	05	13	-09	10	26	10	04	29	04	15	-24	-06	-06	12	-26	-20	-05	43
45. Past places lived	02	-20	-22	10	-10	10	16	20	22	12	05	08	02	00	-02	-18	15	-02	19	00	12	36
46. Weight	-14	-01	09	09	12	63	12	-09	-04	14	-05	02	09	04	-07	02	00	04	-15	06	02	53
47. Height	-06	-02	-05	-11	-03	58	03	03	17	00	00	-03	01	06	11	-05	-06	-09	-04	-06	-02	42
48. Illnesses & accidents	-09	11	08	09	06	05	-03	05	05	12	07	01	-14	-06	02	06	-54	-06	03	-06	00	39
49. Years schooling	12	10	02	11	28	10	-04	06	-06	00	03	-12	07	03	00	-09	-06	-56	07	-04	00	49
50. Years job training	07	-18	-06	02	-06	06	-05	-07	12	07	-60	-14	-07	05	00	-11	-04	01	-02	-02	02	48
51. Age left home	13	01	-01	03	-13	06	-07	-02	82	01	00	03	07	-03	00	00	03	-11	-08	-12	08	76
52. Number of handicaps	13	04	-02	00	03	22	-05	-01	-06	11	-08	-10	-10	20	-01	-41	-34	01	-31	01	03	54
53. IQ	02	75	-01	02	13	-02	16	02	-04	-10	03	06	03	-04	02	00	-08	01	-10	10	11	67
54. Lack of anxiety	-12	01	04	-07	01	-02	-11	-04	-01	-06	10	06	60	02	-01	19	09	-04	-05	01	-06	46
55. Truthfulness	04	08	-17	12	11	-16	11	01	02	-45	04	-11	02	-07	-06	08	09	00	-04	04	-04	35
56. Range of attention	06	57	01	05	10	00	29	07	06	03	06	-03	05	06	01	08	00	-23	-07	01	-17	54
57. Applies reasoning	-04	09	-03	-36	36	00	02	28	-01	-16	-21	-09	12	10	04	-01	-20	-20	-10	07	-03	42
58. Reaction time	-05	13	-02	08	-03	01	-04	05	-23	-05	02	02	01	-09	-09	-02	05	01	06	60	01	48
59. Psychomotor speed	04	25	-28	16	-01	06	03	08	-42	-07	22	07	04	-14	01	11	00	-06	06	16	02	47
60. Verbal facility	00	58	-04	05	39	07	-10	-09	-15	00	-07	-11	-08	01	01	-03	-12	-05	22	06	02	62
61. Unhappiness	-12	10	-02	28	03	-12	-04	-03	04	-11	02	-07	-57	01	11	03	-12	01	04	08	00	50
62. Creative fluency	02	12	-07	10	83	05	18	09	-05	-02	03	04	-07	-10	-01	02	-07	-04	-05	08	01	80
63. Creative flexibility	-03	22	07	17	82	-02	11	06	-11	-01	08	00	06	-04	06	06	06	-08	-10	-05	02	82
64. Creative frequency	03	15	03	-06	61	14	-12	-05	-22	-01	07	15	-01	10	24	19	-09	02	-10	-11	-05	66
65. Practical creativity	-01	-03	02	-03	20	06	08	03	08	12	05	02	-08	03	62	-08	04	05	-01	-04	10	49
66. Creative elaboration	-06	17	-03	08	-03	03	04	-13	-01	-14	-06	04	04	07	56	12	-02	-07	-04	-06	-12	45
67. Mental health Draw-a-man	17	12	-02	-07	08	-11	03	01	-04	-03	09	03	-02	-53	-09	05	03	03	04	09	-01	38
68. Parent's activities	04	-10	26	07	-01	30	03	-02	-16	-07	-24	-13	-01	-02	21	10	-34	-10	-02	08	09	48
69. Index of social class	10	-09	-37	05	09	-29	-03	13	10	12	17	-01	03	09	-12	12	30	13	09	03	-08	48
70. Family dynamics	23	03	50	15	-05	-09	01	08	01	17	-13	05	10	04	-07	-03	-21	-03	12	01	-03	47
71. Attitude, job & employer	35	-07	06	-17	-05	-02	01	14	06	41	-14	-01	30	-10	-13	23	-01	11	-07	-07	-06	57
72. Interpersonal development	24	02	08	-17	03	-24	18	19	08	28	-10	-18	28	-28	03	-03	-23	-11	01	-07	-10	58
73. Need achievement	43	05	-01	-19	00	-07	10	07	03	26	-16	08	15	-32	-12	35	-04	05	01	02	04	61
74. Self concept	44	-17	20	16	04	-16	11	18	05	26	-05	03	09	-22	-09	21	-19	-01	01	-04	-02	58
75. Self direction	21	07	-05	-18	02	-13	-11	47	03	12	17	08	04	05	-20	07	14	-22	02	05	13	51
76. Occupational maturity	27	-07	-15	-12	14	01	12	51	-17	-06	-10	-02	10	07	-10	12	-10	07	00	-08	04	52
77. Communicative maturity	05	11	06	07	13	-07	16	63	-09	09	00	-10	-05	07	10	-02	01	-01	-07	-02	-04	52
78. Social maturity	26	14	-01	-10	13	10	10	36	-01	-09	04	22	06	-07	-21	20	03	-25	03	01	14	51

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[a] Rounded to two places, decimal points omitted

[b] These factors are reflected to positive manifold

TABLE 6

ESTIMATED MODAL WEIGHTS OF FACTOR VARIABLES
FOR 78 PREDICTOR VARIABLES[a,b]

Predictor Variable	1	2	3	4	5[c]	6[c]	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21[c]
1. Mental health							-04				-06	-25	23					10			
2. Physical health				09				-03		-05			06	14	-09	05			15	06	
3. Frequency of medication				-08								04	-06				-04		27		
4. Enjoyed school				05								-26									
5. Reason left home									38		-04	-07	-04		08	10		19	11	04	-12
6. Optimum performance			05			-05		04	03			-09			-05	09	04		21		09
7. Emotional stability				-33	07					-16						07			-11	-06	
8. Cheerfulness				-10		-03				-08		-14			04	16	04	-11			
9. Adaptability		-05														29	-04				
10. Stability of family			27				-09			-13	08				07			09		10	
11. Perceptual awareness	07		-04		05					-07	06	-18		-11			-09		04	-12	-08
12. Definite convictions	-05	14					04	04	05					09		04				-06	05
13. Recognizes limitations		-05			06				05			05	05		-06	-10	-23		07	-04	
14. Written communication		24					-10							-05	06	-12	05	15			-05
15. Self esteem	-04		04		-07	-07	14			04		05			10					-19	
16. Responsibility	15			-07		-04				-20	10	05	04	09		-13					
17. Psychosexual integration								13		-18	24			-14					05	-04	16
18. Grooming						04		17		09	-05		-10	-08		04			-07	06	10
19. Dominant										-07		20	20		07				06		06
20. Sociability			-06		-04	09	46				-03	-04				06					
21. Affectionate, kind				-05		03						-08	-16	04				15		-18	
22. Positive re father			28	-08	06			-11	04		03	05	-08	-04	-04			-04		03	-10
23. Positive re mother			23	03					-04								18	-12	15	-12	07
24. Positive re men	-05		18							06		-05		15	-08		07	-06			-20
25. Positive re women		07				08	05			21					-07					-09	
26. Positive re children			07		08				05				07	04		-07		23	12	-06	
27. Cooperative				06				08			10	-05		31						30	
28. Persistent	29	10			-03		-18		-03		-08	20	-08								
29. Strives for success	12										-38	08	-04		07		29	-05			-07
30. Handles failure well	25							-15	-16	-04	29	-15									
31. Self directing	05		-09							-11		13		16			-30				
32. Motivated by difficulty	05		-04	11	-05			-13		14				-09		-07				-04	
33. Responds readily				-04		-06	35			-06	-05	10	-04			-08				18	
34. Maximum performance	19	-06	-11	05	04	05				04				-04		05					-09
35. Amoral character			-04					-07		05	07		-07	26	-05	05		08			-15
36. Expedient character			-07	-04	11						-10	-05						-08	15		
37. Conforming character			05								-04								-21	05	35
38. Conscientious character				05			-05	20		-07		03		-08		-07	06				-31
39. Altruistic character					-05			11	04					-05		06	-05	04		06	-11
40. Integrated personality	07	-12				12						-08			-07		14		-05		17
41. Enjoyment of life	-07			-15						07	13	08						-08	05	18	-03
42. General happiness				-30		06	-05				05			-08		-12				-04	
43. Degree of contentment			-04	-20		-04	06				-20	-04	04		-04		-04	08		04	10
44. Age						07		04				18			-15			04	-11	-10	
45. Past places lived		-09		-04		10		06		05						-16	07		09		12
46. Weight	05			-08		33							05		-08		04				
47. Height			-03	-04		35	-08							-04	06				06		-03
48. Illnesses & accidents					-03						09					09	-25	-04	04		
49. Years schooling												-07				-05		-43	05		
50. Years job training				-04						-09	-30	-04				-05	06				
51. Age left home		03	-06					-04	54									-17	-06		07
52. Number of handicaps	06			-08								-13		09		-21	-14		-11		
53. IQ		38						-05						07	-06				-04	04	08
54. Lack of anxiety				04		04							31						-05		-06
55. Truthfulness					-04		03			-26			05	-08					-06		-04
56. Range of attention		20			-08	-03	07											-14	-11		-14
57. Applies reasoning								07	04		-08	-08					-07	-04	-03		
58. Reaction time																				39	
59. Psychomotor speed			-05		-11	07			-11		06			-09					04		
60. Verbal facility		24				08	-07			06		-05	-05						20		
61. Unhappiness						-04		06	06			-04	-25			08	-11				
62. Creative fluency		-15			45		05					06		-11	-08			04		10	
63. Creative flexibility			05	04	39	-08		-06	12								08		-12	-04	13
64. Creative frequency				-04	13	03	-15		-06		08	16		06	12	10		05	04	-03	
65. Practical creativity										15	05				40	-07				04	04
66. Creative elaboration				04									03	03	27	05					-04
67. Mental health Draw-a-man					-04									-25		-07					-03
68. Parent's activities						14				-14	-17				10	08	-13				
69. Index of social class	05		-08		05	-10			09		10			10			19	09			
70. Family dynamics			11	07		-08			-05		-08	07	03				-10				
71. Attitude, job & employer										31			10			08		09			-05
72. Interpersonal development						-15				20		-08	06			-09	-13	-05			-12
73. Need achievement								-09		13				-24		20		06			
74. Self concept				18		-03				06				-17		06	-07				
75. Self direction				-04			-07	17		07	08			04	-04			-09			06
76. Occupational maturity			-06					19		-03	-11			07			-03	06		-05	
77. Communicative maturity								34	-04					05	05	-04					
78. Social maturity			05			04						06			-06	05		-06			

[a] All weights of .00 are omitted

[b] Rounded to two places, decimal points omitted

[c] These factors are reflected to positive manifold

TABLE 7

ORTHOGONAL LOADINGS AND MODAL WEIGHTS FOR PREDICTOR FACTORS

Predictor Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 1--Controlled Awareness: A conforming level of character development was found to be related to an impression of personal responsibility, persistence, motivation to succeed, and performance commensurate with abilities. These attributes were rated by a trained interviewer after structured interviews with the subject and his parents.				
8. Cheerfulness	26	00	7.97	96
11. Perceptual awareness	65[a]	07		
13. Recognizes limitations	28	00		
16. Responsibility	78[a]	15		
18. Grooming	25	00		
21. Affectionate, kind	36[a]	00		
24. Positive re men	26	-05		
25. Positive re women	37	00		
27. Cooperative	69[a]	00		
28. Persistent	82[a]	29		
29. Strives for success	82[a]	12		
30. Handles failure well	78[a]	25		
31. Self-directing	75[a]	05		
32. Motivated by difficulty	70[a]	05		
34. Maximum performance	74[a]	19		
37. Conforming character	48[a]	00		
38. Conscientious character	29	00		
40. Integrated personality	67[a]	07		
71. Attitude, job and employer	35	00		
73. Need achievement	43[a]	00		
74. Self-concept	44[a]	00		
76. Occupational maturity	27	00		
78. Social maturity	26	00		

[a] Highest loading of this variable on this factor

TABLE 7--Continued

Factor 2--Convergent Thinking: A major loading from general intelligence combined with major loadings from fluency with symbols and listening ability or range of attention to define the factor.

Predictor Variable	Factor Loadings	Modal Weights	Eigen-values	R
12. Definite convictions	49[a]	14	2.53	88
14. Written communication	57[a]	24		
53. IQ	75[a]	38		
56. Range of attention	57[a]	20		
59. Psychomotor speed	25	00		
60. Verbal facility	58	24		

[a] Highest loading of this variable on this factor

Factor 3--Interpersonal Competence: Stable home environment, infrequent change of address, and higher social class appeared to be related to a high regard for significant others. These attitudes were reflected in statements made by the subject concerning his family. A negative relation existed between stable home environment and an amoral level of character development.

10. Stability of family	67[a]	27	3.94	91
15. Self-esteem	34	04		
22. Positive re father	68[a]	28		
23. Positive re mother	61[a]	23		
24. Positive re men	63[a]	18		
25. Positive re women	40[a]	00		
26. Positive re children	42[a]	07		
27. Cooperative	30	00		
35. Amoral character	-36[a]	-04		
36. Expedient character	-32	-07		
37. Conforming character	45	05		
40. Integrated personality	31	00		
45. Past places lived	-22[a]	00		
59. Psychomotor speed	-28	-05		
68. Parent's activities	26	00		
69. Index of social class	-37[a]	-08		
70. Family dynamics	50[a]	11		

[a] Highest loading of this variable on this factor

TABLE 7--Continued

Factor 4--Unstable Temperament: Lack of happiness as reported by the subject corresponded to emotional instability as reported by parents, and to lack of affection and unkindness as observed by the interviewer.

Predictor Variable	Factor Loadings	Modal Weights	Eigen-values	R
7. Emotional stability	-59[a]	-33	2.12	84
8. Cheerfulness	-38[a]	-10		
21. Affectionate, kind	-25	-05		
41. Enjoyment of life	-46[a]	-15		
42. General happiness	-58[a]	-30		
43. Degree of contentment	-46[a]	-20		
61. Unhappiness	28	00		

[a] Highest loading of this variable on this factor

Factor 5--Divergent Thinking (Factor Reflected): Limited amounts of originality and creativity in thinking was exhibited as well as a certain ability to use reasoning in practical situations. A tendency toward impulsivity of action was noted in loadings from expedient level of character development.

Predictor Variable	Factor Loadings	Modal Weights	Eigen-values	R
36. Expedient character	40[a]	11	2.96	93
49. Years schooling	28	00		
57. Applies reasoning	36[a]	00		
60. Verbal facility	39	00		
62. Creative fluency	83[a]	45		
63. Creative flexibility	82[a]	39		
64. Creative frequency	61[a]	13		

[a] Highest loading of this variable on this factor

TABLE 7--*Continued*

Predictor Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 6--*Body Image* (Factor Reflected): Loadings on height and weight combined to define the factor. Minor contributions from social class and social openness appeared to indicate persons possessed with greater physical size tended to be more outgoing and came from a higher social class.				
6. Optimum performance	-25	-05	1.62	82
20. Sociability	27	09		
46. Weight	63[a]	33		
47. Height	58[a]	35		
68. Parent's activities	30	14		
69. Index of social class	-29	-10		

[a] Highest loading of this variable on this factor

Factor 7--*Responsiveness*: Major loadings from responsiveness, sociability, and self-acceptance defined the factor. Ratings on these attributes were from the *Interpersonal Impressions Rating Scale*.

12. Definite convictions	31	04	2.29	87
15. Self-esteem	47[a]	14		
17. Psychosexual integration	25	00		
19. Dominant	26	00		
20. Sociability	71[a]	46		
21. Affectionate, kind	35	00		
33. Responds readily	65[a]	35		
56. Range of attention	29	07		

[a] Highest loading of this variable on this factor

TABLE 7--Continued

Predictor Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 8--Social Maturity: Loadings from Vineland Social Maturity Scale subscales on Self-Direction, Occupation, Communication, and Socialization combined with loadings from well-groomed appearance, desirable psychosexual integration, and high levels of character development to define the factor. There was suggestion that the ability to reason in a practical situation was related to social maturity.				
6. Optimum performance	31	00	2.53	86
17. Psychosexual integration	33[a]	13		
18. Grooming	41[a]	17		
38. Conscientious character	43[a]	20		
39. Altruistic character	38[a]	11		
57. Applies reasoning	28	07		
75. Self-direction	47[a]	17		
76. Occupational maturity	51[a]	19		
77. Communicative maturity	63[a]	34		
78. Social maturity	36[a]	00		

[a]Highest loading of this variable on this factor

Predictor Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 9--Age Graded Independence: Older subjects appeared to have more acceptable reasons for establishing residences separate from parents. However, these persons exhibited less psychomotor skill.				
5. Reason left home	78[a]	00	2.15	91
44. Age	26	00		
51. Age left home	82[a]	54		
59. Psychomotor speed	-42[a]	-11		

[a]Highest loading of this variable on this factor

TABLE 7--*Continued*

Predictor Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 10--*Self-Realizing Achievement Drive*: Positive attitudes toward employer and employment appeared to be related to positive self-concept, to positive interpersonal development, and to need achievement as measured by a projective technique, *Peck's Sentence Completion*. The ability to relate positively to others was reflected in an observed positive regard for women (*Interpersonal Impressions Rating Scale*). Little significance was attached to the loading on truthfulness, as measured by the *Lie Scale* of *CMAS*, because of the low reliability obtained for the measure.				
25. Positive re women	33	21	1.29	79
55. Truthfulness	-45[a]	-26		
71. Attitude, job and employer	41[a]	31		
72. Interpersonal development	28	20		
73. Need achievement	26	13		
74. Self-concept	26	06		

[a] Highest loading of this variable on this factor

Predictor Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 11--*Habilitation Training*: Length of habilitation training defined the factor. An increase in years of job training appeared to be negatively related to achievement of psychosexual integration.				
17. Psychosexual integration	30	24	1.28	81
50. Years job training	-60[a]	-30		

[a] Highest loading of this variable on this factor

TABLE 7--*Continued*

Predictor Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 12--*Alienation Syndrome*: Persons older in years expressed a greater dislike for school. This negative attitude toward the academic was related to poorer mental health as measured by *Bown's Self-Report Inventory*.				
1. Mental health	-27	-25	1.17	80
4. Enjoyed school	-56^{a}	-26		
19. Dominant	25	20		
44. Age	29^{a}	18		

[a] Highest loading of this variable on this factor

Factor 13--*Openness to Stimuli*: Major loadings from well-integrated personality, general happiness, freedom from anxiety, and ability to govern the environment defined the factor. These traits had a negative relation to an amoral level of character development.				
1. Mental health	50^{a}	00	2.08	85
2. Physical health	26	06		
19. Dominant	48^{a}	20		
35. Amoral character	-26	-07		
41. Enjoyment of life	27	00		
54. Lack of anxiety	60^{a}	31		
61. Unhappiness	-57^{a}	-25		
71. Attitude, job and employer	30	10		
72. Interpersonal development	28	06		

[a] Highest loading of this variable on this factor

TABLE 7--*Continued*

Predictor Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 14--*Absence of Superego*: Poor mental health as measured by *Draw-A-Man*, and lack of interpersonal development and lack of motivation as measured by *Peck's Sentence Completion* combined with ratings on amoral, the lowest level of character development to define the factor.				
35. Amoral character	34	26	1.24	79
67. Draw-a-man, mental health	-53[a]	-25		
72. Interpersonal development	-28[a]	00		
73. Need achievement	-32	-24		

[a] Highest loading of this variable on this factor

Factor 15--*Orderliness of Concept Formation*: Complete and practical ideas were given as responses to tasks requiring divergent thinking.				
65. Practical creativity	62[a]	40	1.35	80
66. Creative elaboration	56[a]	27		

[a] Highest loading of this variable on this factor

Factor 16--*Motivated Flexibility*: Loadings from adaptability as reported by parents and freedom from accompanying physical handicaps combined with the need to achieve to define the factor.				
6. Optimum performance	32	09	1.56	81
7. Emotional stability	31	07		
8. Cheerfulness	37	16		
9. Adaptability	49[a]	29		
52. Number of handicaps	-41[a]	-21		
73. Need achievement	35	20		

[a] Highest loading of this variable on this factor

TABLE 7--*Continued*

Predictor Variable	Factor Loadings	Modal Weights	Eigen-values	R

Factor 17--*Physical Stamina*: Retardates who had fewer physical handicaps, illnesses, and accidents appeared to be from lower social status, and their parents participated in fewer civic activities. Recognition of their inabilities had not been achieved.

13. Recognizes limitations	-48^{a}	-23	1.56	83
48. Illnesses and accidents	-54^{a}	-25		
52. Number of handicaps	-34	-14		
68. Parent's activities	-34	-13		
69. Index of social class	30	19		

[a] Highest loading of this variable on this factor

Factor 18--*Absence of Learned Social Maturity*: Lack of schooling combined with lower scores on socialization to suggest that continuance in an educational environment promoted social maturity.

21. Affectionate, kind	25	15	1.11	78
26. Positive re children	26	23		
49. Years schooling	-56^{a}	-43		
78. Social maturity	-25	-06		

[a] Highest loading of this variable on this factor

Factor 19--*Optimum Performance*: Loadings for good health and performance at a maximum level combined to define the factor. Persons possessed with physical stamina had only slight need for medication.

2. Physical health	33^{a}	15	1.30	79
3. Frequency of medication	54^{a}	27		
6. Optimum performance	34^{a}	21		
44. Age	-26	-11		
52. Number of handicaps	-31	-11		

[a] Highest loading of this variable on this factor

TABLE 7--Continued

Predictor Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 20--Reaction to Physical Stimuli: A major loading from Discrimination Reaction Time, a measure of ability to distinguish between and to react to physical stimuli, defined the factor.				
58. Reaction time	60[a]	39	.96	74

[a]Highest loading of this variable on this factor

Predictor Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 21--Conformity of Character (Factor Reflected): Conformity, a level of character development, provided the factor's major loading.				
37. Conforming character	29	35	.62	71

Criterion Factors

Structured interviews with the subject, the subject's parents, and the subject's job supervisor provided data on the criterion--success--variables. These data were factor analyzed to determine if variables which measure three aspects of success--personal, socio-civic, and vocational--could be reduced to a smaller number of basic dimensions, and to determine if there were primary factors present in each of the three aspects.

The factor analytic methods which were employed in deriving predictor factors were also used in deriving criterion factors. The loadings for the 17 factors derived from 80 continuous and point scale criterion variables are presented in Table 8. Modal weights are presented in Table 9.

In Table 10 each of the 17 criterion factors is presented in the order of its extraction. Accompanying the tentative name given the factor is its Eigenvalue and factor prediction accuracy. Immediately following these data, factor loadings and modal weights are listed for variables which have made major contributions to the structure of the factor.

TABLE 8

ROTATED FACTOR LOADINGS FOR 80 CRITERION VARIABLES[a]

Criterion Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	h^2
1. Residence	06	-07	73	02	-03	-03	-07	-18	-03	-03	-01	-02	-01	-08	-10	-01	06	60
2. Spare time activities	19	-02	14	-09	-02	05	-28	17	-29	00	15	28	04	06	25	-25	07	49
3. Music enjoyment	-12	-05	-01	02	-05	10	-02	07	04	58	04	-10	02	-06	03	-04	00	40
4. Law conformity	16	-20	-08	-15	-02	05	-02	19	-58	-09	11	-01	12	16	06	-03	03	54
5. Driver's license	13	-04	54	00	-08	07	-17	05	-02	18	-04	02	-09	03	11	02	-04	41
6. Credit rating	20	05	-02	-02	-05	-10	01	05	-17	04	-04	-19	-08	03	40	-07	04	30
7. Improved financial state	03	48	-06	-09	14	12	-07	17	-07	15	25	-14	-15	06	-06	00	04	45
8. Purchases own clothing	15	66	-07	-12	12	-13	-12	-31	11	-07	-18	12	10	-01	06	-13	11	73
9. Job expectancy	09	45	08	-05	28	-12	33	02	-09	-07	12	-09	13	-05	-04	04	16	51
10. Regard for supervisor	26	05	-10	05	16	-02	00	02	-05	03	55	-07	01	07	-20	-09	-04	48
11. Compatible employees	08	-10	-08	14	04	00	06	-03	03	05	04	-06	-04	16	-46	-01	21	34
12. Realistic goals	04	37	13	-01	20	-03	00	00	01	33	04	15	20	09	01	01	01	38
13. Advancement possibility	11	30	-09	-03	22	-36	-12	05	-19	05	14	-03	25	-07	-13	-15	08	48
14. Job in training area	-11	01	-11	02	10	08	09	00	01	08	05	-06	46	-03	-02	05	06	29
15. Exercises right to vote	04	-04	08	17	-04	-17	04	18	-04	-10	03	-05	00	-12	-31	-09	-06	24
16. Finances from parents	14	73	-11	-15	05	-19	00	-07	19	-08	-11	09	11	-01	05	-01	-01	70
17. Parents regard as mature	-08	37	-17	-11	04	-03	-24	-18	08	14	11	11	19	-02	18	-11	-15	43
18. Self assurance	13	15	-09	-36	05	-41	-12	-25	-02	-10	-04	02	-06	12	-07	-04	-02	47
19. Skill with finances	28	16	-13	-64	05	06	02	-02	-12	-03	-02	09	02	13	16	-27	-05	68
20. Education aided success	30	10	-01	-20	05	-04	-23	05	-12	00	06	-12	03	-07	08	-40	00	41
21. Respects authority	-01	-10	08	-58	13	10	00	00	-04	06	13	-19	14	-11	20	00	13	52
22. Follows orders willingly	14	14	03	-74	09	-09	-07	07	-06	10	-03	03	-06	-02	01	-01	08	65
23. Meets new people	02	-20	19	-16	17	-11	-39	28	-07	-05	10	-15	-03	-09	03	00	12	44
24. Maintains friendships	00	02	26	-21	-05	-01	-38	-06	13	05	06	-02	00	19	-06	03	-07	33
25. Mature manner with girls	07	-08	05	-09	-06	00	-61	00	-05	-02	-04	-05	-03	-07	07	-12	-10	44
26. Leadership ability	-02	16	13	-03	-09	07	-29	-15	-08	-18	13	-08	-25	06	-10	-30	-25	45
27. Dependability of son	20	22	23	-25	-15	12	-22	01	-09	-01	-24	01	-05	12	-07	-25	-05	45
28. Son requires assistance	13	46	08	-45	-06	-24	-04	-02	00	-18	-11	02	05	01	-05	-14	-01	57
29. Desire more independence	-12	-18	-01	53	-06	00	03	-16	-02	13	09	-07	13	-17	-05	-16	12	48
30. Source of pleasure	15	14	34	-31	10	09	-31	12	-08	09	03	-04	-04	17	15	-16	03	48
31. Source of trouble	22	01	05	-32	-06	00	-21	-05	-42	-05	11	25	-02	-07	16	-10	-16	53
32. Aid from social agencies	00	00	14	-05	02	-22	07	-01	-60	02	-08	-12	-09	-02	01	-05	15	48
33. Satisfied with son's job	02	44	-07	-21	14	06	11	02	-12	10	05	-35	-07	18	-03	-14	13	50
34. Reason jobs terminated	30	18	-03	-29	-01	-10	38	01	-18	-09	24	03	12	20	11	-01	05	53
35. Enjoy job responsibility	01	29	04	-14	07	01	-03	-06	-12	04	31	00	-01	10	07	-41	13	43
36. Initiates activity	29	17	09	-58	09	-09	-13	-19	-02	-10	04	06	12	12	-02	-18	-07	61
37. Health and stamina	19	00	11	-06	07	13	-12	-02	14	-06	-05	-25	-21	00	10	-12	-04	25
38. Performance under pressure	40	12	00	-06	07	-03	-12	-11	23	-25	-17	04	-05	27	07	-02	-05	44
39. Handles company money	22	-04	07	14	-07	04	-12	-02	-10	09	03	-50	10	-03	05	-07	02	39
40. Trained for present job	48	05	-25	-09	01	-08	-03	15	-01	-13	06	-23	27	20	-01	-14	-07	55
41. High performance level	56	02	-06	02	-03	-09	26	01	18	05	-01	-03	08	-18	-08	-01	-02	47
42. Sacrifices leisure	63	11	-21	-19	08	02	-01	08	06	05	04	11	-08	-03	-10	04	03	55
43. Consistent worker	78	12	04	-20	05	-07	-01	04	-09	-04	-06	04	-03	01	08	-18	07	73
44. Neatness	50	-02	10	-02	02	00	-01	00	15	-16	01	-05	-03	-02	26	-19	-07	42
45. Accepts responsibility	43	-02	-05	03	05	-12	-24	-05	13	-26	-01	-08	20	29	-04	-06	11	50
46. Enjoys helping others	48	14	-04	-09	07	-21	-12	17	-12	04	06	-19	-01	05	-02	13	-01	42
47. Obeys orders willingly	69	-06	-08	-16	12	-06	00	-11	-06	-04	04	04	-14	-15	01	-02	-01	59
48. Relates to employees	64	19	10	-03	06	02	-05	00	-20	06	05	-10	-03	09	-06	13	-06	55
49. Careful on job	58	04	08	-05	16	12	-02	-11	-15	-01	05	10	03	09	27	-04	11	54
50. Proceeds independently	77	05	12	-10	15	01	00	03	-07	-07	-03	05	10	09	03	-01	-04	68
51. Job attendance	61	06	-08	-02	04	14	17	13	11	-01	-02	-16	-03	-08	06	-26	13	58
52. Punctuality	61	01	-01	04	-05	32	-04	02	07	-11	-08	05	01	-05	01	-05	11	52
53. Politeness to customers	61	-06	05	03	-08	-21	-10	17	-06	07	05	-28	-03	11	00	05	-14	59
54. Makes usable suggestions	50	-06	03	-03	15	-20	02	17	14	02	-01	-37	11	20	-02	12	-04	58
55. Safety conscious	64	06	19	04	-12	00	-17	-07	-12	01	06	-12	01	07	-01	06	-04	54
56. Cares for property	72	01	12	-06	05	09	08	-14	-07	02	11	-03	-09	17	-05	-04	02	63
57. Evaluation by employer	78	16	07	-21	07	-07	03	-09	-07	-04	02	11	-09	-02	02	-03	-08	74
58. Job happiness	17	18	-07	04	69	06	00	11	06	00	00	13	07	-09	07	-03	12	61
59. Job contentment	00	15	-06	-17	64	05	-09	01	03	02	00	-20	05	02	-01	00	-03	52
60. Job satisfaction	11	-04	01	-11	71	-11	06	-06	-08	01	07	04	-01	04	-04	04	03	57
61. Past residences	-01	22	-01	-02	09	01	-32	-16	09	09	-03	-23	04	-17	-15	06	31	41
62. Hours spent viewing TV	-15	-24	03	18	-14	18	-01	20	-13	-11	-06	04	16	-11	-22	05	-06	33
63. Days outdoor recreation	05	04	-01	03	-10	05	-07	01	13	02	-03	01	-03	01	01	01	-52	31
64. Movie attendance	-01	09	-02	02	01	-01	02	-09	-01	-01	-66	-04	-06	03	-04	-01	-01	47
65. Time spent reading	-01	-11	09	-05	-14	-19	-04	10	09	16	-11	-08	-05	22	-08	-35	-10	33
66. Amount of savings	00	28	41	03	-04	20	06	16	-10	-25	09	-04	02	10	12	05	-33	54
67. Amount of indebtedness	05	17	49	-18	-05	-04	15	-01	14	-34	-01	-01	-03	-06	03	03	-10	49
68. Number of close friends	05	14	-24	05	00	-18	-32	04	-11	08	17	06	08	23	17	14	10	38
69. Training-to-job interval	-11	-11	05	10	00	00	-04	-03	07	04	-01	01	02	-47	03	05	03	27
70. Average job tenure	18	30	-11	-09	05	-11	37	-13	-22	-14	05	04	27	-05	07	00	-29	55
71. Hourly earnings	03	70	16	04	-01	-04	20	01	12	-10	06	00	-27	10	12	02	-16	72
72. Annual earnings	14	69	15	-18	08	-04	12	-10	00	-11	-11	-04	02	11	07	-04	-35	74
73. Hours spend in meetings	01	25	14	-04	-06	-01	-11	21	03	-19	11	03	33	13	02	-08	-16	35
74. Days spent with parents	02	-41	49	13	-05	-02	-06	-04	-21	07	01	01	-13	01	03	-25	00	57
75. Hours worked w/parents	-07	-27	14	-14	-02	-14	25	10	-12	21	03	-04	09	21	-04	03	06	33
76. Hours in church activity	02	-07	-16	-04	07	00	00	55	-10	10	10	02	03	06	-01	-02	-01	38
77. Hours helping at home	06	-23	01	01	05	48	-11	-04	09	16	00	-08	09	01	-06	00	-10	37
78. Hours employed per week	23	46	-19	-16	12	-02	-06	07	-27	08	-06	-12	05	03	-03	08	26	53
79. Number of dependents	-04	15	33	-25	12	-16	-07	-19	38	-17	-08	-07	-04	-14	-12	-08	02	50
80. Job unhappiness	-16	-23	08	07	-49	-08	-11	-05	-10	25	-09	-06	-05	-06	14	03	-38	60

[a] Rounded to two places, decimal points omitted

TABLE 9

ESTIMATED MODAL WEIGHTS OF FACTOR VARIABLES
FOR 80 CRITERION VARIABLES[a],[b]

Criterion Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Residence			37					-10					07		-04		
2. Spare time activities							-13	06	-04		05	21			13	-11	
3. Music enjoyment									04	26							
4. Law conformity						06			-23	-08				04			
5. Driver's license			22					05		12					06		
6. Credit rating					-03	-05	06					-06			23		
7. Improved financial state		15				11		12	-04	10	08	-09	-09		-06		
8. Purchases own clothing		17					-04	-19			-08	07				-05	16
9. Job expectancy		08	07				11										03
10. Regard for supervisor											32				-13		-03
11. Compatible employees														07	-24	-05	
12. Realistic goals		08	10							22		15	17	07			
13. Advancement possibility		06		04		-11			-05					-07	-04	-07	
14. Job in training area						04							25				
15. Exercises right to vote						-09		09		-04				-06	-16		-04
16. Finances from parents		29				-04		06	05				06	-05	04		04
17. Parents regard as mature		04	-07				-08	-11		04	03		09	-08	06		-04
18. Self assurance		-06	-06			-26		-06		-04			-06	04	-09		
19. Skill with finances		-04		-15										06		-16	
20. Education aided success							-08									-26	-05
21. Respects authority				-21		07		-03			04	-09	06	-05	08	10	04
22. Follows orders willingly	-06			-35				05	05	07				-08		04	
23. Meets new people					07	-06	-13	17		-06	03	-11		-13			04
24. Maintains friendships			04				-15				08			10	-05	04	
25. Mature manner with girls							-26							-04			
26. Leadership ability						11	-06	-10		-08			-18		-04	-12	-09
27. Dependability of son					-04	07		08			-20				-15	-04	
28. Son requires assistence				-07	-08	-07		09		-04				-04	-11		
29. Desire more independence				19		-08		-05		07	04	-07	11	-09		-17	04
30. Source of pleasure			07			05	-05			04				04	04		
31. Source of trouble				-05				-04	-17			09		-09			
32. Aid from social agencies						-07			-33			-06					14
33. Satisfied with son's job	-05	06				06	05		-04	04		-21		10		-04	
34. Reason jobs terminated				-07			18				08				05		15
35. Enjoy job responsibility								-06			16			04		-20	05
36. Initiates activity				-19				-12					10	05		-04	
37. Health and stamina					04	06						-09	-05		05	-04	
38. Performance under pressure	04						-10	-05	16	-07				15			
39. Handles company money							-05	-04				-31		-04	03		
40. Trained for present job			-08					07				-06	14	06		-06	-07
41. High performance level	09					-05	09		08	04	03		04	-19	-07		
42. Sacrifices leisure	09		-04	-04	-04			10		05		18		-04	-04		
43. Consistent worker	11						05				-09			-03		-04	03
44. Neatness		-08							05	-05					19	-11	
45. Accepts responsibility				04			-07			-14			19	21			
46. Enjoys helping others						-04	-08	06	-06			-05	-04			14	
47. Obeys orders willingly	08		-11					-07			04		-15	-15			-07
48. Relates to employees	06	05		13			-03		-09	13					-07	12	
49. Careful on job	05			12	03	07			-05						22	04	07
50. Proceeds independently	12										-05	10	05	04		05	
51. Job attendance	11			06	-06	06	10	15	11		-04	-05		-09		-13	14
52. Punctuality	09					21				-05							07
53. Politeness to customers	11		05			-20		07		04		-09					-04
54. Makes usable suggestions	07	-06			03	-08			08		-07	-19		05		06	
55. Safety conscious	08		07		-11		-05	-06								11	
56. Cares for property	13					07	05	-19			06		-07	08	-14		
57. Evaluation by employer	20	-10				-05						06	-07			05	-13
58. Job happiness				08	34			10				09			05	-04	-06
59. Job contentment		-04		-04	26						-06	-10					-13
60. Job satisfaction	-04	-07			37	-04		-05		05		03			-05		
61. Past residences							-12	-10		04		-07	09	-10	-09		15
62. Hours spent viewing TV				04		06		05	-06	-07	-05		10	-04	-11		
63. Days outdoor recreation								-05		04							-26
64. Movie attendance									-08		-41						
65. Time spent reading						-07		05		06				10		-24	
66. Amoung of savings			13	05		04		13		-14	09		05				-10
67. Amount of indebtedness			20	-06			05			-21			03			05	
68. Number of close friends	04		-04	08		-09	-14							14	08	13	
69. Training-to-job interval													05	-29			
70. Average job tenure							10	-09	-15	-06			25	-04			-26
71. Hourly earnings		27		10			05	04					-24	05	09		
72. Annual earnings	-07	13			05							-06					-24
73. Hours spend in meetings		04			-04			13	04	-04			21				
74. Days spent with parents			15	05	05	-05			-12	04						-13	
75. Hours worked w/parents		-09	07	-05	-03	-09	11			14				16			
76. Hours in church activity								31									
77. Hours helping at home				-06		28				06		-04					-04
78. Hours employed per week		11					-05		-12			-03				04	06
79. Number of dependents			08			-11			18			-05	-04	-09			
80. Job unhappiness					-09	-04				16		-04			04		-29

[a] All weights of .00 are omitted

[b] Rounded to two places, decimal points omitted

TABLE 10

ORTHOGONAL LOADINGS AND MODAL WEIGHTS FOR CRITERION FACTORS

Criterion Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 1--Effectiveness of Employee: Subject was regarded by job supervisor as a steady worker, punctual and regular in attendance, polite to customers, safety conscious, a person who maintained desirable performance level, and exercised care in the use and maintenance of work equipment. Accompanying the employer's evaluation was the parent's statement that the subject possessed self-assurance and initiative, had acceptable reason for any job termination, and had schooling which contributed to his success. Although the factor loading for subject's approval of supervisor was above .25, the modal weight was .00 which indicated that a positive view of the supervisor was related to the supervisor's assessment of the employee as an effective worker.				
10. Regard for supervisor	26	00	8.23	97
19. Skill with finances	28	00		
20. Education aided success	30	00		
34. Reason jobs terminated	30	00		
36. Initiates activity	29	00		
38. Performance under pressure	40[a]	04		
40. Trained for present job	48[a]	00		
41. High performance level	56[a]	09		
42. Sacrifices leisure	63[a]	09		
43. Consistent worker	78[a]	11		
44. Neatness	50[a]	00		
45. Accepts responsibility	43[a]	00		
46. Enjoys helping others	48[a]	00		
47. Obeys orders willingly	69[a]	08		
48. Relates to employees	64[a]	06		
49. Careful on job	58[a]	05		
50. Proceeds independently	77[a]	12		
51. Job attendance	61[a]	11		
52. Punctuality	61[a]	09		
53. Politeness to customers	61[a]	11		
54. Makes usable suggestions	50[a]	07		
55. Safety conscious	64[a]	08		
56. Cares for property	72[a]	13		
57. Evaluation by employer	78[a]	20		

[a] Highest loading of this variable on this factor

TABLE 10--Continued

Criterion Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 2--Responsible Work Orientation: Both hourly and annual earnings were related to hours worked per week, length of employment, and the amount of savings acquired by the subject. Affluence and job tenure appeared to be related to a realistic viewing of capabilities, optimism regarding advancement in job, freedom from financial aid from parents, and approval by parents of son's job. A negative loading indicated those who attained greater vocational success spent fewer hours with parents and less time watching television.				
7. Improved financial state	48[a]	15	4.82	93
8. Purchases own clothing	66[a]	17		
9. Job expectancy	45[a]	08		
12. Realistic goals	37[a]	08		
13. Advancement possibility	30	06		
16. Finances from parents	73[a]	29		
17. Parents regard as mature	37[a]	04		
28. Son requires assistance	46[a]	00		
33. Satisfied with son's job	44[a]	06		
35. Enjoy job responsibility	29	00		
62. Hours spent viewing TV	-24[a]	00		
66. Amount of savings	28	00		
70. Average job tenure	30	00		
71. Hourly earnings	70[a]	27		
72. Annual earnings	69[a]	13		
73. Hours spend in meetings	25	04		
74. Days spent with parents	-41	00		
75. Hours worked with parents	-27[a]	-09		
78. Hours employed per week	46[a]	11		

[a] Highest loading of this variable on this factor

TABLE 10--*Continued*

Criterion Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 3--*Functional Autonomy*: Ability to obtain a driver's license was related to the ability to save, to do credit buying, and to contribute to the support of others. Residence was with or near parents. These persons often performed satisfactorily in jobs for which they had received no specific training.				
1. Residence	73[a]	37	2.58	88
5. Driver's license	54[a]	22		
24. Maintains friendships	26	04		
30. Source of pleasure	34	07		
40. Trained for present job	-25	-08		
66. Amount of savings	41[a]	13		
67. Amount of indebtedness	49[a]	20		
74. Days spent with parents	49[a]	15		
79. Number of dependents	33	08		

[a] Highest loading of this variable on this factor

Factor 4--*Parental Ambivalence*: Parents viewed negatively their son's ability to avoid trouble, to respect authority, his self-assurance, dependability, initiative, and ability with finances, yet reported the son desired more independence. The combination of attributes suggested either overprotection on the part of the parents or a son who had borderline functioning and little awareness of these inabilities.				
18. Self-assurance	-36[a]	00	3.43	90
19. Skill with finances	-64	-15		
21. Respects authority	-58[a]	-21		
22. Follows orders willingly	-74[a]	-35		
27. Dependability of son	-25	00		
28. Son requires assistance	-45	-07		
29. Desire more independence	53[a]	19		
30. Source of pleasure	-31[a]	00		
31. Source of trouble	-32	-05		
36. Initiates activity	-58[a]	-19		
79. Number of dependents	-25	00		

[a] Highest loading of this variable on this factor

TABLE 10--Continued

Criterion Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 5--Job Satisfaction: Subject's report of job satisfaction was related to his expected continuance on the job.				
9. Job expectancy	28	00	2.31	87
58. Job happiness	69[a]	34		
59. Job contentment	64[a]	26		
60. Job satisfaction	71[a]	37		
80. Job unhappiness	-49[a]	-09		
[a]Highest loading of this variable on this factor				
Factor 6--Dependence upon Authority: Subjects who spent a greater portion of their leisure helping at home were often persons lacking in self-assurance. Although there was punctuality in job attendance these persons saw little prospect for job advancement.				
13. Advancement possibility	-36[a]	-11	1.44	81
18. Self-assurance	-41[a]	-26		
52. Punctuality	32	21		
77. Hours helping at home	48[a]	28		

[a]Highest loading of this variable on this factor

TABLE 10--Continued

Criterion Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 7--*Task Orientation* (Withdrawal Syndrome): Desirable job performance, acceptable reason for job termination, and greater length of employment were not accompanied by social openness. Fewer friends, inability to meet new people and handle contacts with girls combined with desirable vocational attributes to suggest a socially withdrawn, task-oriented person.				
2. Spare time activities	-28	-13	2.34	87
9. Job expectancy	33	11		
23. Meets new people	-39^a	-13		
24. Maintains friendships	-38^a	-15		
25. Mature manner with girls	-61^a	-26		
26. Leadership ability	-29	-06		
30. Source of pleasure	-31	-05		
34. Reason jobs terminated	38^a	18		
41. High performance level	26	09		
61. Past residences	-32^a	-12		
68. Number of close friends	-32^a	-14		
70. Average job tenure	37^a	10		
75. Hours worked with parents	25	11		

^{a}Highest loading of this variable on this factor

Factor 8--*Dependence upon Religious Institutions*: Although lacking in self-assurance and independent purchasing power, there was an ability to meet new people in an acceptable manner, and to participate in religious activities.				
8. Purchases own clothing	-31	-19	1.33	80
18. Self-assurance	-25	-06		
23. Meets new people	28	17		
76. Hours in church activity	55^a	31		

^{a}Highest loading of this variable on this factor

TABLE 10--Continued

Criterion Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 9--Family Irresponsibility: Lack of responsibility was implied by negative loadings on law conformity, acceptable use of leisure time and freedom from welfare assistance. These qualities were negatively related to the number of dependents listed on the withholding statement.				
2. Spare time activities	-29[a]	-04	2.03	85
4. Law conformity	-58[a]	-23		
31. Source of trouble	-42[a]	-17		
32. Aid from social agencies	-60[a]	-33		
78. Hours employed per week	-27	-12		
79. Number of dependents	38[a]	18		

[a] Highest loading of this variable on this factor

Factor 10--Escape from Responsibility: Music enjoyment appeared to provide an escape from an awareness of inabilities, from a lack of job happiness, lack of savings, fear of responsibility, and an inability to perform under pressure.				
3. Music enjoyment	58[a]	26	1.44	80
12. Realistic goals	33	22		
38. Performance under pressure	-25	-07		
45. Accepts responsibility	-26	-14		
66. Amount of savings	-25	-14		
67. Amount of indebtedness	-34	-21		
80. Job unhappiness	25	16		

[a] Highest loading of this variable on this factor

TABLE 10--Continued

Criterion Variable	Factor Loadings	Modal Weights	Eigen- values	R
Factor 11--Work versus Gregarious Satisfactions: Persons who enjoyed job responsibility, had a positive viewing of their supervisor, and reported an improved financial condition during the past two years did not report frequency in movie attendance.				
7. Improved financial state	25	08	1.44	81
10. Regard for supervisor	55	32		
35. Enjoy job responsibility	31	16		
64. Movie attendance	-66[a]	-41		

[a] Highest loading of this variable on this factor

Factor 12--Borderline Functioning: Poor physical health plus the inability to handle company money, to contribute good suggestions, and to be polite in work situations appeared to result in employment which did not please parents. However, these persons who had borderline functioning in vocational areas did maintain leisure interests which were acceptable.				
2. Spare time activities	28[a]	21	1.41	81
31. Source of trouble	25	09		
33. Satisfied with son's job	-35	-21		
37. Health and stamina	-25[a]	-09		
39. Handles company money	-50[a]	-31		
53. Politeness to customers	-28	-09		
54. Makes usable suggestions	-37	-19		

[a] Highest loading of this variable on this factor

TABLE 10--Continued

Criterion Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 13--Acquiescent as to Placement: Persons who secured jobs in an area for which they had been trained expressed belief in opportunity for advancement, and had increased job tenure. However, these persons did not display leadership ability, nor did their jobs have a high rate of pay.				
13. Advancement possibility	25	00	1.19	79
14. Job in training area	46[a]	25		
26. Leadership ability	-25	-18		
40. Trained for present job	27	14		
70. Average job tenure	27	25		
71. Hourly earnings	-27	-24		
73. Hours spend in meetings	33[a]	21		

[a] Highest loading of this variable on this factor

Criterion Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 14--Successful Job Performance: Shortened interval between job training and employment appeared to be related to ability to accept responsibility and to perform under pressure.				
38. Performance under pressure	27	15	1.26	78
45. Accepts responsibility	29	21		
69. Training-to-job interval	-47[a]	-29		

[a] Highest loading of this variable on this factor

TABLE 10--*Continued*

Factor 15--*Self-Directed Responsibility*: Successful handling of credit and leisure activities plus positive ratings by the employer on neatness and carefulness indicated maturity in self-direction and a tendency to be meticulous. However, these positive attributes of success were accompanied by negative loadings on two aspects of socio-civic success. There was a failure to exercise the right to vote, and to enjoy association with fellow employees.

Criterion Variable	Factor Loadings	Modal Weights	Eigen-values	R
2. Spare time activities	25	13	1.22	78
6. Credit rating	40[a]	23		
11. Compatible employees	-46	-24		
15. Exercises right to vote	-31[a]	-16		
44. Neatness	26	19		
49. Careful on job	27	22		

[a] Highest loading of this variable on this factor

Factor 16--*Failure Syndrome*: Negative loadings from nine variables defined a factor which suggested a lack of success in personal, vocational and socio-civic areas. Lack of leadership, of dependability, of job-responsibility, and of ability to handle money successfully was reported by parents who also believed that schooling had not contributed to their son's success. These negative views toward the son and his educational experiences were related to job absenteeism as reported by the employer, and to less time spent with parents, lack of reading enjoyment, and pursuit of undesirable leisure activities as reported by the subject.

Criterion Variable	Factor Loadings	Modal Weights	Eigen-values	R
2. Spare time activities	-25	-11	1.33	79
19. Skill with finances	-27	-16		
20. Education aided success	-40[a]	-26		
26. Leadership ability	-30[a]	-12		
27. Dependability of son	-25[a]	-04		
35. Enjoy job responsibility	-41[a]	-20		
51. Job attendance	-26	-13		
65. Time spent reading	-34[a]	-24		
74. Days spent with parents	-25	-13		

[a] Highest loading of this variable on this factor

TABLE 10--Continued

Criterion Variable	Factor Loadings	Modal Weights	Eigen-values	R
Factor 17--Laborer Syndrome: Long working hours and lack of unhappiness with job conditions combined with negative loadings on leadership, on amount of earnings and savings, on lack of job tenure, and on more changes in residence to suggest a limited success syndrome frequently observed in migratory or seasonal agricultural laborers.				
26. Leadership ability	-25	-09	1.48	81
61. Past residences	31	15		
63. Days outdoor recreation	-52[a]	-26		
66. Amount of savings	-33	-10		
70. Average job tenure	-29	-26		
72. Annual earnings	-35	-24		
78. Hours employed per week	26	06		
80. Job unhappiness	-38	-29		

[a] Highest loading of this variable on this factor

Profiles of Predictor and Criterion Factor Scores

Of the ten professionals in the field of mental retardation who contributed their judgments concerning variables which should be included in this study of success, nine are of the opinion that success should be treated as a profile rather than as a unitary score. Through the use of individual factor scores a profile was constructed which provides a graphic description of the performance of a subject on the various success factors. A companion profile was developed from success indicators or predictor factor scores.

Profiles of four subjects are presented in Figures 1 through 8. Figures 1 and 2 show scores on predictor and criterion factors for a subject who has consistently high performance on success factors. Figures 3 and 4 show scores for a subject who has high, but irregular, performance on success factors. Figures 5 and 6 show scores for a subject who has low, but fairly consistent, performance on success factors. Figures 7 and 8 present scores for a subject who has low, but irregular, performance on success factors.

Comparison of the predictor and criterion profiles for a given individual serves to give graphic portrayal of the relation between high (or low) performance on predictor factors to high (or low) performance on success factors. The statistical significance of these relationships is determined through the use of multiple regression techniques.

Figures for the predictor and criterion profiles are arranged in the text in a manner which permits simultaneous viewing of the two profiles for a given individual. Figures 1 through 8 are presented in the pages which follow.

INDIVIDUAL PROFILE OF PREDICTOR FACTORS SHOWING A SUBJECT
WITH CONSISTENTLY HIGH PERFORMANCE
ON SUCCESS FACTORS

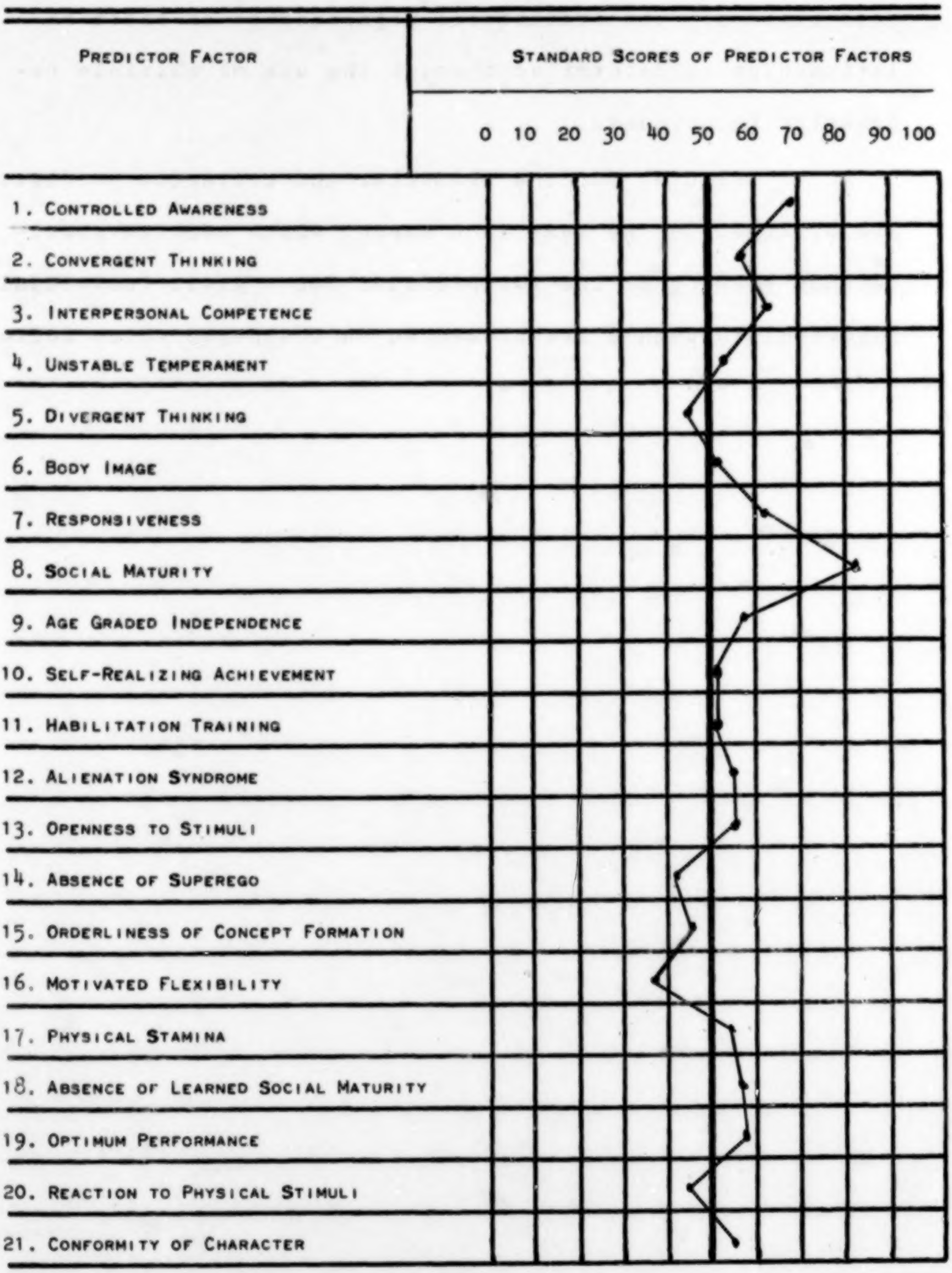

Figure 1

INDIVIDUAL PROFILE OF CRITERION FACTORS SHOWING A SUBJECT
WITH CONSISTENTLY HIGH PERFORMANCE
ON SUCCESS FACTORS

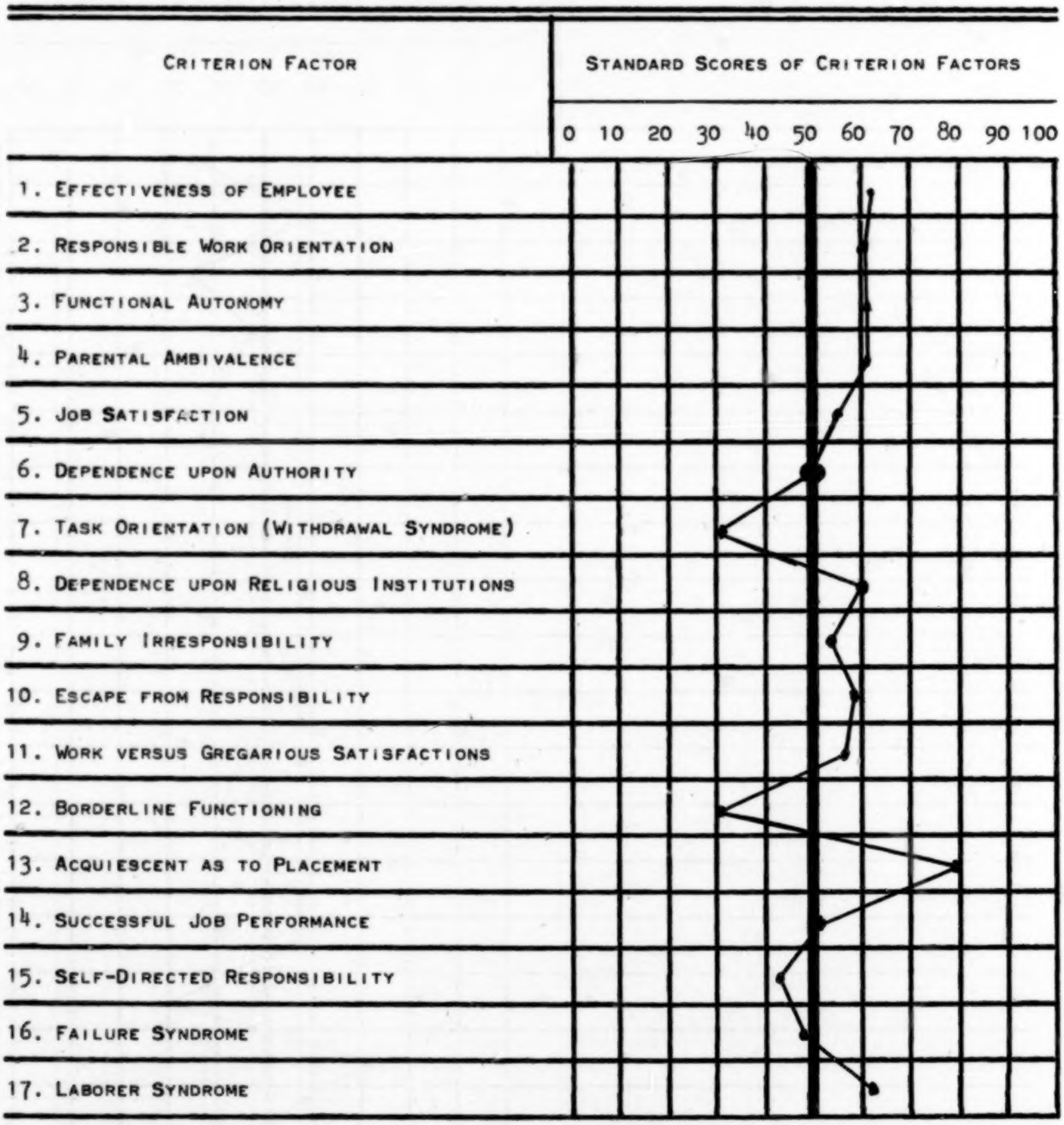

FIGURE 2

INDIVIDUAL PROFILE OF PREDICTOR FACTORS SHOWING A SUBJECT
WITH HIGH BUT IRREGULAR PERFORMANCE
ON SUCCESS FACTORS

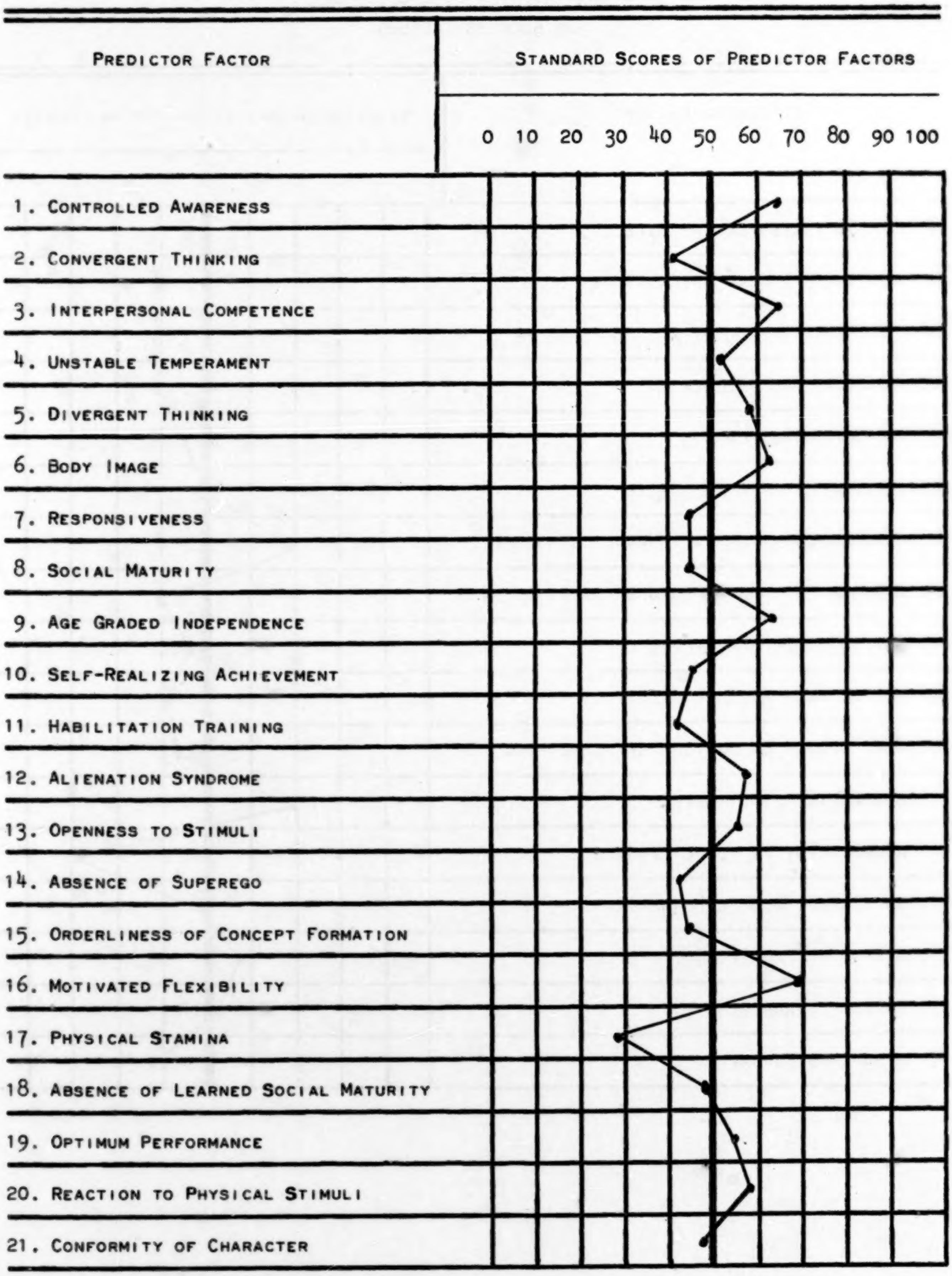

Figure 3

INDIVIDUAL PROFILE OF CRITERION FACTORS SHOWING A SUBJECT
WITH HIGH BUT IRREGULAR PERFORMANCE
ON SUCCESS FACTORS

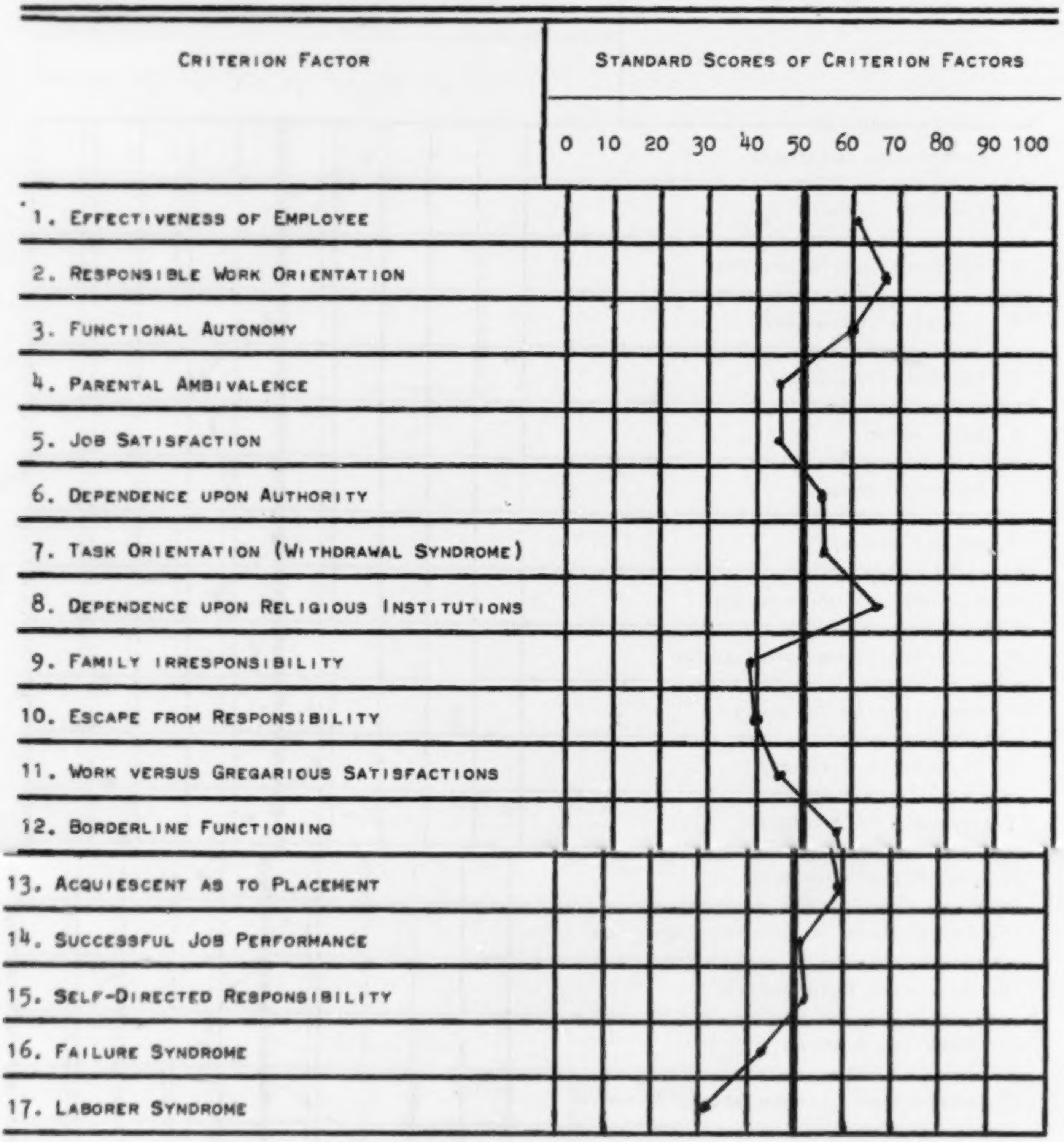

FIGURE 4

INDIVIDUAL PROFILE OF PREDICTOR FACTORS SHOWING A SUBJECT
WITH LOW BUT FAIRLY CONSISTENT PERFORMANCE
ON SUCCESS FACTORS

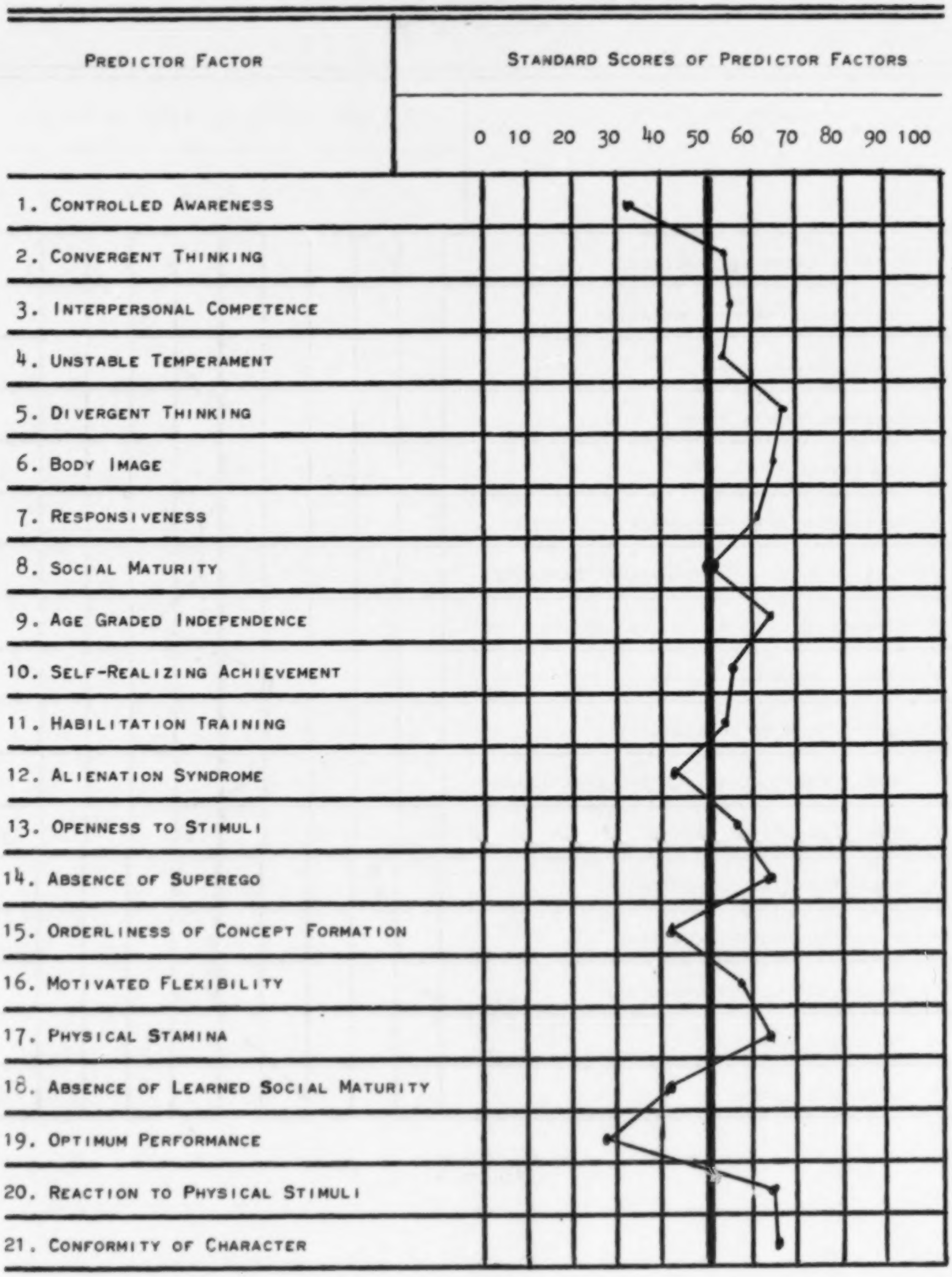

Figure 5

INDIVIDUAL PROFILE OF CRITERION FACTORS SHOWING A SUBJECT WITH LOW BUT FAIRLY CONSISTENT PERFORMANCE ON SUCCESS FACTORS

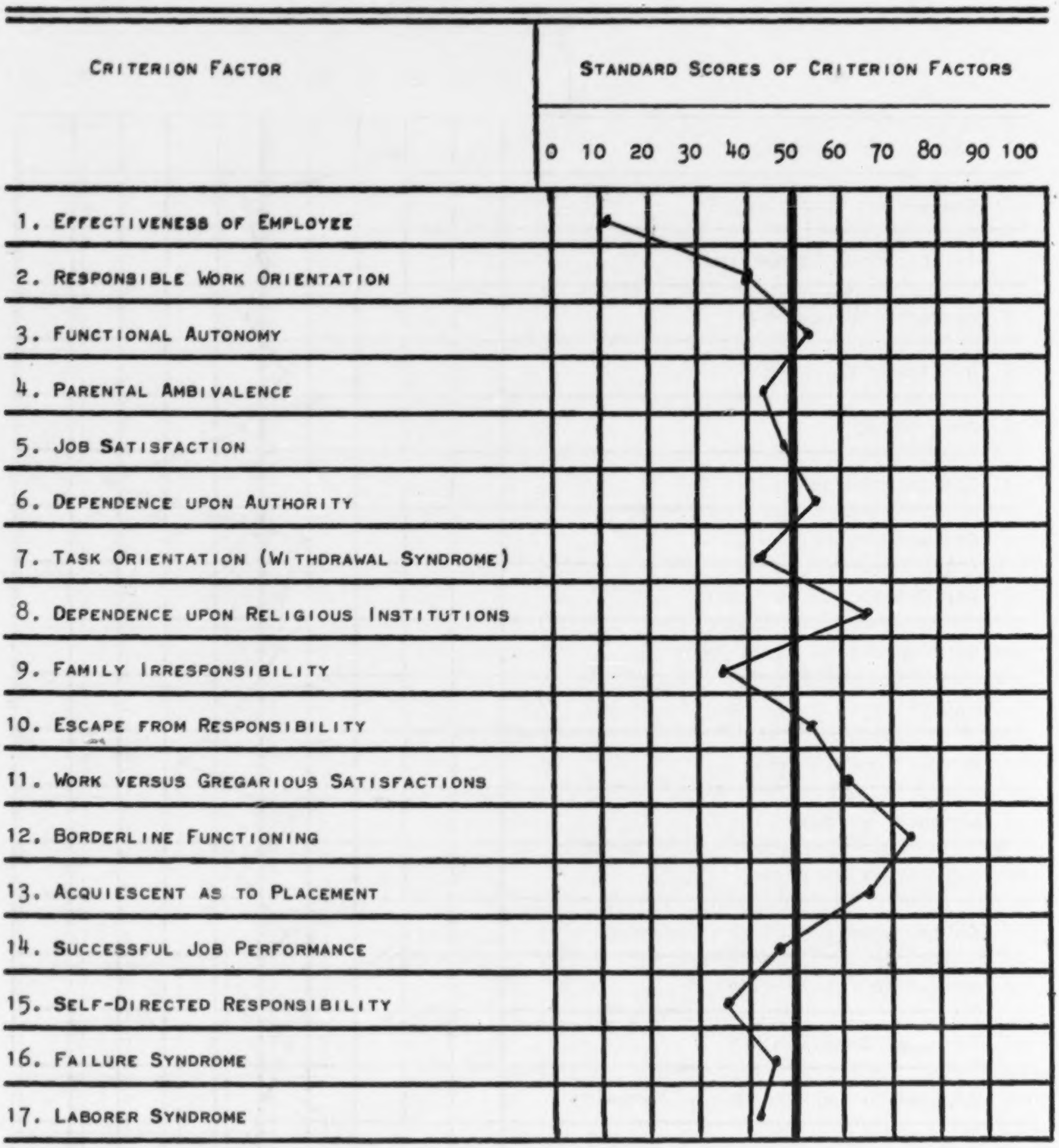

Figure 6

INDIVIDUAL PROFILE OF PREDICTOR FACTORS SHOWING A SUBJECT
WITH LOW BUT IRREGULAR PERFORMANCE
ON SUCCESS FACTORS

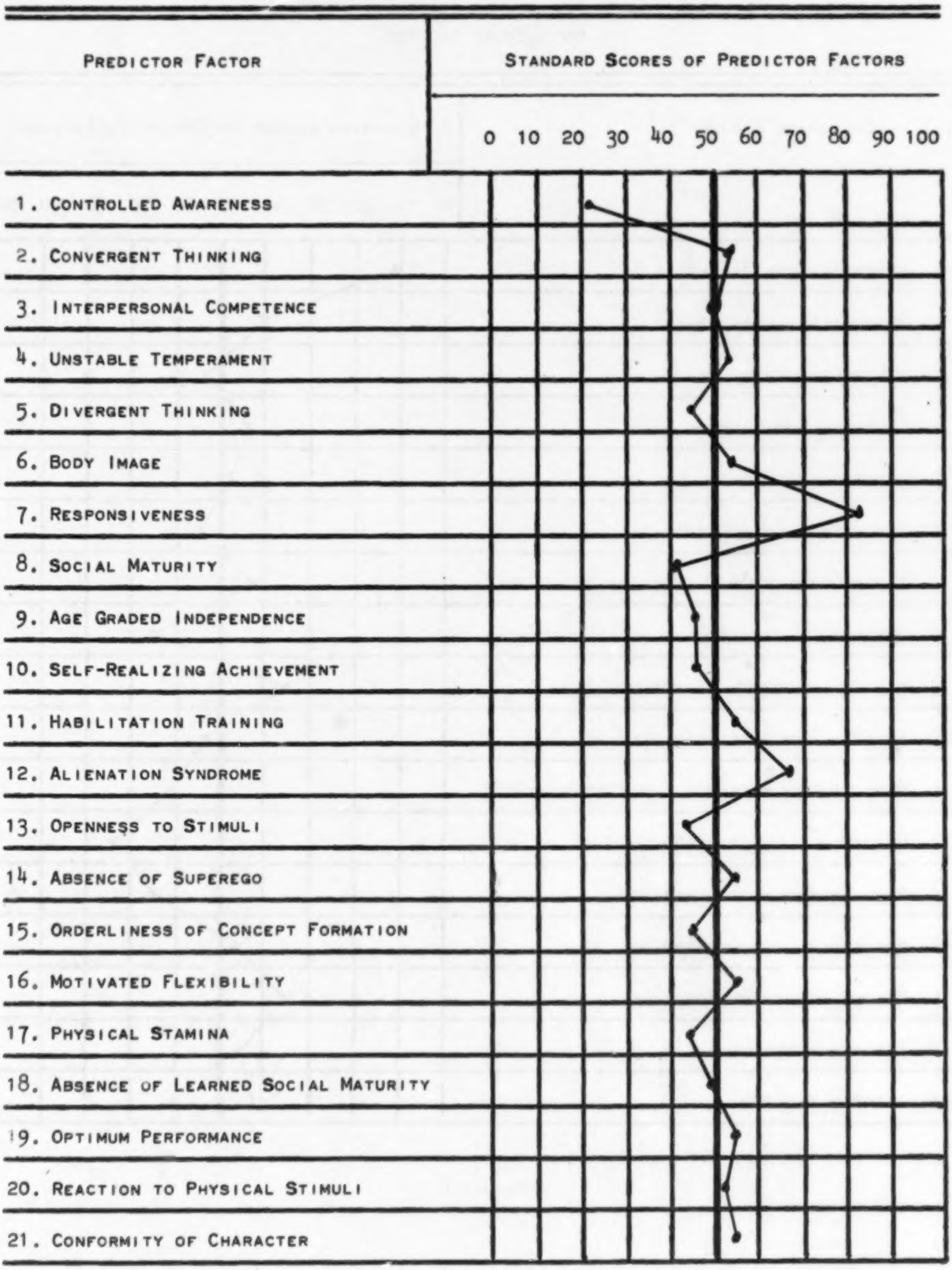

Figure 7

INDIVIDUAL PROFILE OF CRITERION FACTORS SHOWING A SUBJECT WITH LOW BUT IRREGULAR PERFORMANCE ON SUCCESS FACTORS

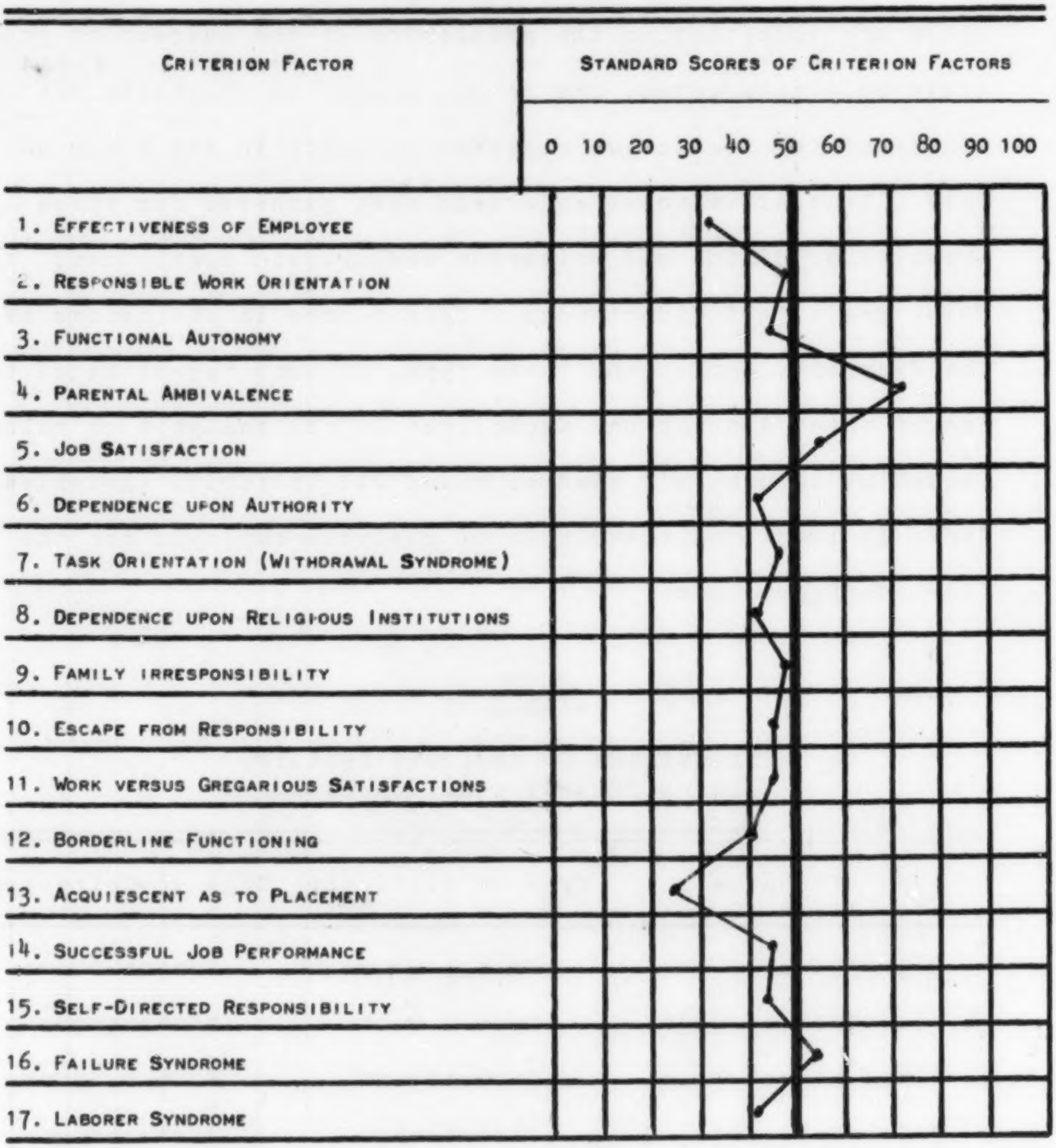

Figure 8

Validation of Predictor Variables

The present study was made to determine what variables are important in the prediction of the success of young adult male retardates, and it has sought to ascertain the validity of the predictive measures included in the study as well. To achieve these ends data were gathered for three types of predictor and criterion variables: continuous, point scale, and dichotomous. Differences in the nature of the distributions of the three types of data necessitated the use of three statistical techniques in the analysis of relationships between all predictor and all criterion variables. Table 11 lists the techniques of analysis employed for the four configurations.

TABLE 11

TECHNIQUES OF ANALYSIS EMPLOYED FOR DIFFERENT CONFIGURATIONS

Type of Analysis	Type of Predictor	Type of Criterion
1. Regression	Factor Score	Factor Score
2. Fixed Effect Model	Factor Score	Dichotomous
3. Fixed Effect Model	Dichotomous	Factor Score
4. Phi coefficient	Dichotomous	Dichotomous

Multiple Regression

The explanatory and predictive value of the 21 predictor factors was explored by determining their relative weights for, and strength of association with, criterion measures (McGuire, 1960). To do this, a multiple linear regression model was used which did not assume that all predictor variables came from multivariate normal distributions, nor was it assumed that predictor variables were linearly independent. Utilization of a high-speed computer with the method which employed an iterative technique made possible a full-model estimate based on all predictor vectors. Standard partial coefficients of multiple regression, or standard weights, reflected the contribution of each predictor factor to the explanation of each criterion--success--factor.

Test of the hypothesis of a significant relationship between predictor and criterion factors was accomplished by the computation of the appropriate F-statistic through use of the formula presented by Ward (1962, p. 212):

$$F = \frac{(R^2 - R_H{}^2) / t}{(1 - R^2) / (n - p)}$$

where R^2 = squared multiple-correlation coefficient for the unrestricted model

and $R_H{}^2$ = squared multiple-correlation coefficient for the restricted model

F-ratios which determine relationships, significant at the .05 and .01 levels of confidence, between each criterion factor and all predictor factors are presented in

Table 12. Examination of the standard weights as set forth in Table 12 makes it possible to select from the system those predictor factors which produce the best estimates of each criterion--success--factor.

Fixed Effect Models

Because of mutually exclusive categories certain dichotomous variables did not lend themselves to factor analysis. These categories were selected as being of critical pertinence to the question at hand by leaders in the field, and insofar as this study goes, the generalization is in terms of the subjects, not the variables.

The fixed effect model as discussed by Graybill (1961) was adopted in order to test the hypothesis pertaining to the relationships of the dichotomous variables with the derived factor scores. The dichotomy was a criterion which was predicted by means of a multiple regression equation which utilized predictor factor scores. Since the dichotomous variables were easily coded as a binary vector, the simplified procedure suggested by Ward (1962) was employed in the present study. F-ratios which denote significant relationships between the 21 predictor factor scores and the 61 dichotomous criterion variables are presented in Table 13.

Fixed effect models also test the hypothesis pertaining to significant relationships between dichotomous predictor variables and criterion factor scores. Significant F-ratios derived from these equations are set forth in Table 14.

TABLE 12

MULTIPLE REGRESSION OF PREDICTOR FACTOR SCORES UPON CRITERION FACTOR SCORES

Criterion Factor	F-Ratio[A]	Std. Wt.[B]	Predictor Factor
1. Effectiveness of Employee	2.71**	.45	1. Controlled Awareness
		.16	14. Absence of Superego
		.16	3. Interpersonal Competence
		.14	16. Motivated Flexibility
		.12	20. Reaction to Physical Stimuli
		.11	10. Self-Realizing Achievement Drive
2. Responsible Work Orientation	4.49**	.32	1. Controlled Awareness
		.30	3. Interpersonal Competence
		.24	13. Openness to Stimuli
		.23	9. Age Graded Independence
		.20	8. Social Maturity
		.18	15. Orderliness of Concept Formation
		.17	12. Alienation Syndrome
		.13	18. Absence of Learned Social Maturity
		.13	21. Conformity of Character
		.11	5. Divergent Thinking
3. Functional Autonomy	2.54**	.25	3. Interpersonal Competence
		.23	13. Openness to Stimuli
		.19	20. Reaction to Physical Stimuli
		.17	10. Self-Realizing Achievement Drive
		.16	11. Habilitation Training
		.15	21. Conformity of Character
		.13	12. Alienation Syndrome
		.13	17. Physical Stamina
		.12.	1. Controlled Awareness
		.11	4. Unstable Temperament
		.10	15. Orderliness of Concept Formation

[A] *Significant at .05
**Significant at .01

[B] Standard weights with absolute magnitudes of less than .10 deleted

TABLE 12--CONTINUED

CRITERION FACTOR	F-RATIO^A	STD. WT.^B	PREDICTOR FACTOR
4. PARENTAL AMBIVALENCE	2.86**	.27	4. UNSTABLE TEMPERAMENT
		.21	1. CONTROLLED AWARENESS
		.21	16. MOTIVATED FLEXIBILITY
		.16	17. PHYSICAL STAMINA
		.16	8. SOCIAL MATURITY
		.12	6. BODY IMAGE
		.11	19. OPTIMUM PERFORMANCE
		.11	11. HABILITATION TRAINING
		.11	5. DIVERGENT THINKING
		.10	12. ALIENATION SYNDROME
		.10	3. INTERPERSONAL COMPETENCE
6. DEPENDENCE UPON AUTHORITY	1.87*	.24	6. BODY IMAGE
		.21	2. CONVERGENT THINKING
		.19	10. SELF-REALIZING ACHIEVEMENT DRIVE
		.15	7. RESPONSIVENESS
		.13	17. PHYSICAL STAMINA
		.12	8. SOCIAL MATURITY
		.11	5. DIVERGENT THINKING
		.11	3. INTERPERSONAL COMPETENCE
		.11	9. AGE GRADED INDEPENCENCE
		.11	11. HABILITATION TRAINING
7. TASK ORIENTATION (WITHDRAWAL SYNDROME)	4.06**	.31	21. CONFORMITY OF CHARACTER
		.30	7. RESPONSIVENESS
		.29	8. SOCIAL MATURITY
		.24	19. OPTIMUM PERFORMANCE
		.17	5. DIVERGENT THINKING
		.15	1. CONTROLLED AWARENESS
		.12	18. ABSENCE OF LEARNED SOCIAL MATURITY
		.11	17. PHYSICAL STAMINA
		.10	9. AGE GRADED INDEPENDENCE

[A] *SIGNIFICANT AT .05
**SIGNIFICANT AT .01

[B] STANDARD WEIGHTS WITH ABSOLUTE MAGNITUDE OF LESS THAN .10 DELETED

TABLE 12--CONTINUED

CRITERION FACTOR	F-RATIO^A	STD. WT.^{B}	PREDICTOR FACTOR
8. DEPENDENCE UPON RELIGIOUS INSTITUTIONS	2.35**	.27	11. HABILITATION TRAINING
		.20	17. PHYSICAL STAMINA
		.19	14. ABSENCE OF SUPEREGO
		.16	15. ORDERLINESS OF CONCEPT FORMATION
		.15	18. ABSENCE OF LEARNED SOCIAL MATURITY
		.14	6. BODY IMAGE
		.12	19. OPTIMUM PERFORMANCE
		.11	13. OPENNESS TO STIMULI
		.11	1. CONTROLLED AWARENESS
		.10	2. CONVERGENT THINKING
		.10	12. ALIENATION SYNDROME
		.10	20. REACTION TO PHYSICAL STIMULI
9. FAMILY IRRESPONSIBILITY	2.11**	.28	3. INTERPERSONAL COMPETENCE
		.20	17. PHYSICAL STAMINA
		.15	1. CONTROLLED AWARENESS
		.15	8. SOCIAL MATURITY
		.14	12. ALIENATION SYNDROME
		.14	19. OPTIMUM PERFORMANCE
		.12	5. DIVERGENT THINKING
		.12	20. REACTION TO PHYSICAL STIMULI
		.11	11. HABILITATION TRAINING
		.11	21. CONFORMITY OF CHARACTER
13. ACQUIESCENT AS TO PLACEMENT	1.93*	.24	9. AGE GRADED INDEPENDENCE
		.22	1. CONTROLLED AWARENESS
		.20	13. OPENNESS TO STIMULI
		.17	21. CONFORMITY OF CHARACTER
		.15	16. MOTIVATED FLEXIBILITY
		.14	4. UNSTABLE TEMPERAMENT
		.13	17. PHYSICAL STAMINA
		.11	14. ABSENCE OF SUPEREGO
		.10	18. ABSENCE OF LEARNED SOCIAL MATURITY

[A] *SIGNIFICANT AT .05
**SIGNIFICANT AT .01

[B] STANDARD WEIGHTS WITH ABSOLUTE MAGNITUDES OF LESS THAN .10 DELETED

TABLE 12--CONTINUED

CRITERION FACTOR	F-RATIO[A]	STD. WT.[B]	PREDICTOR FACTOR
14. SUCCESSFUL JOB PERFORMANCE	1.68*	.26	6. BODY IMAGE
		.21	13. OPENNESS TO STIMULI
		.17	4. UNSTABLE TEMPERAMENT
		.16	2. CONVERGENT THINKING
		.13	19. OPTIMUM PERFORMANCE
		.13	3. INTERPERSONAL COMPETENCE
		.12	9. AGE GRADED INDEPENDENCE
		.12	18. ABSENCE OF LEARNED SOCIAL MATURITY
		.11	21. CONFORMITY OF CHARACTER
16. FAILURE SYNDROME	2.02*	.21	13. OPENNESS TO STIMULI
		.21	20. REACTION TO PHYSICAL STIMULI
		.19	12. ALIENATION SYNDROME
		.18	8. SOCIAL MATURITY
		.17	2. CONVERGENT THINKING
		.14	18. ABSENCE OF LEARNED SOCIAL MATURITY
		.13	6. BODY IMAGE
		.11	5. DIVERGENT THINKING
		.11	10. SELF-REALIZING ACHIEVEMENT DRIVE
		.11	3. INTERPERSONAL COMPETENCE
		.11	16. MOTIVATED FLEXIBILITY
17. LABORER SYNDROME	2.73**	.30	2. CONVERGENT THINKING
		.26	16. MOTIVATED FLEXIBILITY
		.22	17. PHYSICAL STAMINA
		.19	19. OPTIMUM PERFORMANCE
		.17	18. ABSENCE OF LEARNED SOCIAL MATURITY
		.13	9. AGE GRADED INDEPENDENCE
		.13	8. SOCIAL MATURITY
		.10	13. OPENNESS TO STIMULI

[A] *SIGNIFICANT AT .05
**SIGNIFICANT AT .01

[B] STANDARD WEIGHTS WITH ABSOLUTE MAGNITUDES OF LESS THAN .10 DELETED

TABLE 13

FIXED EFFECT MODEL—RELATIONSHIPS BETWEEN PREDICTOR FACTOR SCORES AND DICHOTOMOUS CRITERION VARIABLES

Dichotomous Criterion	F-Ratio[A]	Std. Wt.[B]	Predictor Factor
Leisure with Young Friends	1.84*	.23	16. Motivated Flexibility
		.20	20. Reaction to Physical Stimuli
		.20	5. Divergent Thinking
		.18	6. Body Image
		.16	9. Age Graded Independence
		.14	21. Conformity of Character
		.11	12. Alienation Syndrome
		.10	3. Interpersonal Competence
Leisure with Older Friends	1.77*	.31	5. Divergent Thinking
		.18	7. Responsiveness
		.17	2. Convergent Thinking
		.15	14. Absence of Superego
		.13	16. Motivated Flexibility
		.12	6. Body Image
		.11	4. Unstable Temperament
		.11	17. Physical Stamina
		.11	11. Habilitation Training
		.11	15. Orderliness of Concept Formation
Leisure, Alone	2.34**	.30	5. Divergent Thinking
		.23	2. Convergent Thinking
		.20	15. Orderliness of Concept Formation
		.17	4. Unstable Temperament
		.15	10. Self-Realizing Achievement Drive
		.14	3. Interpersonal Competence
		.13	18. Absence of Learned Social Maturity
		.12	7. Responsiveness
		.11	19. Optimum Performance

[A] *Significant at .05
**Significant at .01

[B] Standard weights with absolute magnitudes of less than .10 deleted

TABLE 13--CONTINUED

Dichotomous Criterion	F-Ratio[A]	Std. Wt.[B]	Predictor Factor
7. Use Credit	1.74*	.24	11. Habilitation Training
		.19	5. Divergent Thinking
		.17	15. Orderliness of Concept Formation
		.17	13. Openness to Stimuli
		.16	19. Optimum Performance
		.16	14. Absence of Superego
		.12	20. Reaction to Physical Stimuli
		.11	10. Self-Realizing Achievement Drive
13. Job Obtained--Self	2.37**	.29	8. Social Maturity
		.25	1. Controlled Awareness
		.17	5. Divergent Thinking
		.16	14. Absence of Superego
		.15	11. Habilitation Training
		.15	13. Openness to Stimuli
		.15	4. Unstable Temperament
16. Job Obtained--Counselor	1.78*	.27	11. Habilitation Training
		.26	1. Controlled Awareness
		.19	13. Openness to Stimuli
		.16	4. Unstable Temperament
		.10	20. Reaction to Physical Stimuli
19. Semiskilled Employment	2.21**	.22	14. Absence of Superego
		.22	1. Controlled Awareness
		.19	13. Openness to Stimuli
		.19	3. Interpersonal Competence
		.17	12. Alienation Syndrome
		.15	9. Age Graded Independence
		.13	18. Absence of Learned Social Maturity
		.12	17. Physical Stamina
		.12	16. Motivated Flexibility
		.11	15. Orderliness of Concept Formation

[A] *Significant at .05
**Significant at .01

[B] Standard weights with absolute magnitudes of less than .10 deleted

TABLE 13--Continued

Dichotomous Criterion	F-Ratio[A]	Std. Wt.[B]	Predictor Factor
20. Unskilled Employment	2.36**	.26	14. Absence of Superego
		.24	1. Controlled Awareness
		.20	13. Openness to Stimuli
		.19	12. Alienation Syndrome
		.15	3. Interpersonal Competence
		.11	16. Motivated Flexibility
		.11	18. Absence of Learned Social Maturity
		.10	17. Physical Stamina
		.10	9. Age Graded Independence
21. Employed at Present	2.86**	.46	1. Controlled Awareness
		.19	11. Habilitation Training
		.18	13. Openness to Stimuli
		.15	10. Self-Realizing Achievement Drive
		.11	3. Interpersonal Competence
		.11	9. Age Graded Independence
23. Happiest--Spare Time	1.86*	.22	20. Reaction to Physical Stimuli
		.20	7. Responsiveness
		.15	11. Habilitation Training
		.15	6. Body Image
		.14	2. Convergent Thinking
		.14	9. Age Graded Indepencence
		.10	21. Conformity of Character
		.10	14. Absence of Superego
		.10	1. Controlled Awareness
		.10	5. Divergent Thinking
		.10	12. Alienation Syndrome
24. Happiest--Family	1.70*	.32	6. Body Image
		.22	1. Controlled Awareness
		.18	13. Openness to Stimuli
		.17	3. Interpersonal Competence
		.11	2. Convergent Thinking
		.10	8. Social Maturity

[A] *Significant at .05
**Significant at .01

[B] Standard weights with absolute magnitudes of less than .10 deleted

TABLE 13--CONTINUED

DICHOTOMOUS CRITERION	F-RATIO[A]	STD. WT.[B]	PREDICTOR FACTOR
32. MARRIED	1.87*	.19	8. SOCIAL MATURITY
		.19	11. HABILITATION TRAINING
		.19	1. CONTROLLED AWARENESS
		.18	13. OPENNESS TO STIMULI
		.14	21. CONFORMITY OF CHARACTER
		.12	19. OPTIMUM PERFORMANCE
		.12	15. ORDERLINESS OF CONCEPT FORMATION
		.12	20. REACTION TO PHYSICAL STIMULI
		.11	3. INTERPERSONAL COMPETENCE
		.10	10. SELF-REALIZING ACHIEVEMENT DRIVE
34. SINGLE	2.17**	.27	8. SOCIAL MATURITY
		.21	1. CONTROLLED AWARENESS
		.18	11. HABILITATION TRAINING
		.17	20. REACTION TO PHYSICAL STIMULI
		.14	10. SELF-REALIZING ACHIEVEMENT DRIVE
		.13	12. ALIENATION SYNDROME
		.13	15. ORDERLINESS OF CONCEPT FORMATION
		.13	14. ABSENCE OF SUPEREGO
		.12	13. OPENNESS TO STIMULI
		.11	9. AGE GRADED INDEPENDENCE
		.11	5. DIVERGENT THINKING
37. SHARE TIME WITH WIFE--ALL	1.82*	.24	8. SOCIAL MATURITY
		.23	1. CONTROLLED AWARENESS
		.21	11. HABILITATION TRAINING
		.14	13. OPENNESS TO STIMULI
		.13	20. REACTION TO PHYSICAL STIMULI
		.12	17. PHYSICAL STAMINA
		.11	3. INTERPERSONAL COMPETENCE
		.10	21. CONFORMITY OF CHARACTER

[A] *SIGNIFICANT AT .05
**SIGNIFICANT AT .01

[B] STANDARD WEIGHTS WITH ABSOLUTE MAGNITUDES OF LESS THAN .10 DELETED

TABLE 13--Continued

Dichotomous Criterion	F-Ratio[A]	Std. Wt.[B]	Predictor Factor
40. Friends--Peers	2.99**	.29	6. Body Image
		.27	4. Unstable Temperament
		.17	15. Orderliness of Concept Formation
		.16	9. Age Graded Independence
		.15	14. Absence of Superego
		.13	13. Openness to Stimuli
		.13	19. Optimum Performance
		.11	5. Divergent Thinking
		.11	17. Physical Stamina
		.11	1. Controlled Awareness
41. Friends--Young	2.21**	.26	4. Unstable Temperament
		.24	7. Responsiveness
		.21	13. Openness to Stimuli
		.17	1. Controlled Awareness
		.15	21. Conformity of Character
		.14	9. Age Graded Independence
		.12	10. Self-Realizing Achievement Drive
		.11	17. Physical Stamina
		.11	20. Reaction to Physical Stimuli
		.11	3. Interpersonal Competence
		.10	12. Alienation Syndrome
		.10	5. Divergent Thinking
		.10	15. Orderliness of Concept Formation
44. Friends--Parents	2.97**	.25	11. Habilitation Training
		.25	6. Body Image
		.20	3. Interpersonal Competence
		.19	2. Convergent Thinking
		.17	10. Self-Realizing Achievement Drive
		.13	17. Physical Stamina
		.13	5. Divergent Thinking
		.12	9. Age Graded Independence
		.12	13. Openness to Stimuli
		.11	15. Orderliness of Concept Formation
		.11	18. Absence of Learned Social Maturity
		.10	12. Alienation Syndrome

[A] *Significant at .05
**Significant at .01

[B] Standard weights with absolute magnitudes of less than .10 deleted

TABLE 13--CONTINUED

DICHOTOMOUS CRITERION	F-RATIO^A	STD. WT.^B	PREDICTOR FACTOR
56. IS INSURED	1.88*	.22	5. DIVERGENT THINKING
		.21	8. SOCIAL MATURITY
		.21	3. INTERPERSONAL COMPETENCE
		.18	6. BODY IMAGE
		.15	17. PHYSICAL STAMINA
		.13	15. ORDERLINESS OF CONCEPT FORMATION
		.12	16. MOTIVATED FLEXIBILITY
		.12	13. OPENNESS TO STIMULI
		.11	18. ABSENCE OF LEARNED SOCIAL MATURITY
57. SUBSTANTIALLY EMPLOYED	2.38**	.31	1. CONTROLLED AWARENESS
		.23	4. UNSTABLE TEMPERAMENT
		.19	18. ABSENCE OF LEARNED SOCIAL MATURITY
		.17	8. SOCIAL MATURITY
		.14	20. REACTION TO PHYSICAL STIMULI
		.13	7. RESPONSIVENESS
		.12	5. DIVERGENT THINKING
		.12	21. CONFORMITY OF CHARACTER
		.11	13. OPENNESS TO STIMULI
59. MINIMALLY EMPLOYED	1.85*	.24	2. CONVERGENT THINKING
		.20	7. RESPONSIVENESS
		.19	3. INTERPERSONAL COMPETENCE
		.18	1. CONTROLLED AWARENESS
		.17	11. HABILITATION TRAINING
		.16	15. ORDERLINESS OF CONCEPT FORMATION
		.13	8. SOCIAL MATURITY
		.12	5. DIVERGENT THINKING

[A] *SIGNIFICANT AT .05
**SIGNIFICANT AT .01

[B] STANDARD WEIGHTS WITH ABSOLUTE MAGNITUDES OF LESS THAN .10 DELETED

TABLE 13--CONTINUED

DICHOTOMOUS CRITERION	F-RATIO[A]	STD. WT.[B]	PREDICTOR FACTOR
61. RESISTANT TO EMPLOYMENT	1.87*	.24	19. OPTIMUM PERFORMANCE
		.24	1. CONTROLLED AWARENESS
		.17	4. UNSTABLE TEMPERAMENT
		.16	15. ORDERLINESS OF CONCEPT FORMATION
		.14	12. ALIENATION SYNDROME
		.14	5. DIVERGENT THINKING
		.12	3. INTERPERSONAL COMPETENCE
		.11	6. BODY IMAGE
		.11	17. PHYSICAL STAMINA
		.10	13. OPENNESS TO STIMULI

[A] *SIGNIFICANT AT .05
**SIGNIFICANT AT .01

[B] STANDARD WEIGHTS WITH ABSOLUTE MAGNITUDES OF LESS THAN .10 DELETED

TABLE 14

FIXED EFFECT MODEL--RELATIONSHIPS BETWEEN DICHOTOMOUS PREDICTOR VARIABLES AND CRITERION FACTOR SCORES

CRITERION FACTOR	F-RATIO[A]	STD. WT.[B]	PREDICTOR VARIABLE
4. PARENTAL AMBIVALENCE	2.99**	.36	1. DESCENT--ANGLO
		.13	7. FROM BROKEN HOME
6. DEPENDENCE UPON AUTHORITY	3.98**	.27	2. DESCENT--LATIN
		.22	4. EXOGENOUS
		.18	7. FROM BROKEN HOME
		.13	5. CHANGE-MAKING ABILITY
14. SUCCESSFUL JOB PERFORMANCE	2.28*	.18	4. EXOGENOUS
		.16	1. DESCENT--ANGLO
		.16	5. CHANGE-MAKING ABILITY
		.14	7. FROM BROKEN HOME

[A] *SIGNIFICANT AT .05
**SIGNIFICANT AT .01

[B] STANDARD WEIGHTS WITH ABSOLUTE MAGNITUDES OF LESS THAN .10 DELETED

Phi Coefficients

Both dichotomous predictor and dichotomous criterion variables were included in the study. Although the assumptions of multiple regression could not be met, it was desirable to determine if significant relationships existed between predictor and criterion variables which were dichotomous. Therefore, relationships were determined through the use of the phi coefficient technique. Findings are presented in Table 15. As is indicated in the table, only 18 of the phi coefficients are statistically significant at or beyond the .05 level of confidence. This is approximately 17 per cent of the correlations involved. The magnitude of these coefficients in general appears to be too low to allow for reliable interpretation. None of the sample of 125 subjects responded to three of the items included; therefore, the three were deleted from the analysis.

TABLE 15

PHI COEFFICIENTS FOR DICHOTOMOUS PREDICTOR VARIABLES AND DICHOTOMOUS CRITERION VARIABLES[A]

Criterion Variable	Predictor Variable[B]				
	Descent--Anglo or Latin	Exogenous or Endogenous	Change-Making Ability	From Broken Home	Works Well with Women
1. Leisure w/peers	11	18*	16	-03	05
2. Leisure w/other relative	-09	-20*	-22	04	06
3. Leisure w/young friends	06	-15	01	-03	09
4. Leisure w/older friends	14	15	04	-10	12
5. Leisure w/parents	06	-12	-06	10	-09
6. Leisure, alone	-09	-05	02	01	-07
7. Use credit	01	16	-06	16	16
8. With friends--always	-20*	16	-13	-06	-05
9. With friends--most time	19*	03	-02	09	07
10. With friends--part time	-10	-06	07	01	02
11. With friends--seldom	06	-06	10	-14	-08
12. With friends--very seldom	-04	02	-06	01	-01
13. Job obtained--self	-09	12	-06	00	13
14. Job obtained--emp. agency	07	-10	-01	-07	-26**
15. Job obtained--Voc. Rehab.	02	-05	-01	06	06
16. Job obtained--counselor	16	-07	12	02	04
17. Job obtained--family	-10	-01	-08	-08	-14
18. Skilled employment	-04	-02	04	03	08
19. Semiskilled employment	04	07	08	02	04
20. Unskilled employment	-04	-05	-08	-02	-07
21. Employed at present	-02	-07	11	10	-03
22. Happiest--work	-03	09	03	-07	-03
23. Happiest--spare time	15	-12	-03	10	-05
24. Happiest--family	-19*	03	-06	09	11
25. Happiest--close friends	12	06	03	-15	-01
26. Happiest--civic activities	-04	-13	01	02	-14
27. Happy--work	-05	04	07	-04	00
28. Happy--spare time	10	07	-05	04	-07
29. Happy--family	-03	03	-04	-06	-02
30. Happy--close friends	-07	-04	06	07	05
31. Happy--civic activity	10	-06	-11	00	09

[A] Rounded to two places, decimal points omitted

[B] *Significant at .05
**Significant at .01

TABLE 15--Continued[A]

Criterion Variable	Predictor Variable[B]				
	Descent--Anglo or Latin	Exogenous or Endogenous	Change-Making Ability	From Broken Home	Works Well with Women
32. Married	-07	09	-06	12	14
33. Engaged	-09	00	-06	07	10
34. Single	26**	-09	00	-07	03
35. Separated	-17	-07	08	-05	05
36. Divorced	-24**	05	13	04	-17
37. Share time w/wife--all	-10	12	-02	07	13
38. Share time w/wife--half	05	-07	-10	15	05
39. Share time w/wif[illegible]rare	-08	-10	12	-07	-10
40. Friends--peers	-22*	17	08	02	-06
41. Friends--young	04	-23**	-27**	07	10
42. Friends--siblings	-09	-08	02	16	10
43. Friends--older	28**	-02	02	-03	04
44. Friends--parents	10	-06	-11	-11	-02
45. Took vacation	-02	-05	-01	01	14
46. Activity w/family--never	21	16	19	01	-07
47. Activity w/family--seldom	16	-24**	01	-09	04
48. Activity w/family--pt. time	-09	-05	-08	08	05
49. Activity w/family--usually	-37**	22*	-08	-01	-06
50. Activity w/family--always	03	05	-02	04	11
51. No. other employees--50	-10	15	-01	-03	14
52. No. other employees--25	-10	-02	-05	10	-05
53. No. other employees--5	16	-02	-05	-03	-01
54. No. other employees--1	05	-08	04	-03	-08
55. No. other employees--0	08	-13	14	-09	-05
56. Is insured	14	06	-01	12	02
57. Substantially employed	04	-12	01	09	-01
58. Unsubstantially employed	16	08	03	12	-01
59. Minimally employed	-22*	10	00	-19*	04
60. Unemployed	01	00	02	03	-20*
61. Resistant to employment	-07	-04	-12	-09	06

[A] Rounded to two places, decimal points omitted

[B] *Significant at .05
**Significant at .01

Variables to Which Total Sample Did Not Respond

Of the 125 subjects only 93 had parents available for interviews. Therefore, scores on A Rating Scale for Child Concept by Worchel and ratings on Fels Parent Behavior Rating Scale--Acceptance of Child were for these 93 parents only. For this reason, these data could not be subjected to the same statistical procedures to which other instruments with scores for the entire group of 125 subjects were subjected.

Multiple regression techniques were employed to determine if significant relationships exist between T-scores for criterion variables and T-scores for Worchel's Rating Scale for Child Concept and Fels Parent Behavior Rating Scale--Acceptance of Child. Significant results of the multiple regression are set forth in Table 16.

The relationship between Worchel's Rating Scale for Child Concept T-scores and Fels Parent Behavior Rating Scale--Acceptance of Child T-scores to dichotomous criterion variables was determined by the fixed effect model (Graybill, 1961; Ward, 1962). Significant results are presented in Table 17.

TABLE 16

MULTIPLE REGRESSION OF WORCHEL T-SCORES AND FELS T-SCORES UPON CRITERION VARIABLES (T-SCORES)

Criterion Variable	F-Ratio[a]	Std. Wt.[b]	Predictor Variable
1. Spare Time Activities	3.81*	.12	1. Worchel and ideal
		.15	2. Worchel and others
		.21	3. Fels rating scale
3. Music Enjoyment	2.78*	-.21	1. Worchel and ideal
		.22	2. Worchel and others
14. Job in Training Area	4.61**	-.12	1. Worchel and ideal
		-.26	2. Worchel and others
		-.14	3. Fels rating scale
17. Parents Regard as Mature	3.03*	.20	1. Worchel and ideal
		.14	3. Fels rating scale
19. Skill with Finances	3.50*	.12	1. Worchel and ideal
		.20	2. Worchel and others
		.14	3. Fels rating scale
22. Follows Orders Willingly	7.16**	.37	2. Worchel and others
		.20	3. Fels rating scale
27. Dependability of Son	4.65**	.24	1. Worchel and ideal
		.18	3. Fels rating scale
28. Son Requires Assistance	4.54**	.29	3. Fels rating scale
30. Source of Pleasure	6.41**	.11	1. Worchel and ideal
		.29	2. Worchel and others
		.21	3. Fels rating scale

---

[a] *Significant at .05
**Significant at .01

[b] Standard weights with absolute magnitudes of less than .10 deleted

TABLE 16--Continued

Criterion Variable	F-Ratio[a]	Std. Wt.[b]	Predictor Variable
31. Source of Trouble	5.70**	.24	2. Worchel and others
		.28	3. Fels rating scale
36. Initiates Activity	7.07**	.29	1. Worchel and ideal
		.14	2. Worchel and others
		.15	3. Fels rating scale
42. Sacrifice Leisure	3.55*	.17	1. Worchel and ideal
		.17	3. Fels rating scale
43. Consistent Worker	5.81**	.14	1. Worchel and ideal
		.17	2. Worchel and others
		.26	3. Fels rating scale
45. Accepts Responsibility	5.95**	.12	1. Worchel and ideal
		.33	3. Fels rating scale
46. Enjoys Helping Others	2.81*	-.12	1. Worchel and ideal
		.15	2. Worchel and others
		.29	3. Fels rating scale
48. Relates to Employees	3.44*	.21	1. Worchel and ideal
		.10	2. Worchel and others
		.12	3. Fels rating scale
49. Careful on Job	2.98*	.16	1. Worchel and ideal
		.12	2. Worchel and others
		.14	3. Fels rating scale
50. Proceeds Independently	5.90**	.24	1. Worchel and ideal
		.10	2. Worchel and others
		.20	3. Fels rating scale

---

[a] *Significant at .05
**Significant at .01

[b] Standard weights with absolute magnitudes of less than .10 deleted

TABLE 16--Continued

Criterion Variable	F-Ratio[a]	Std. Wt.[b]	Predictor Variable
53. Politeness to Customers	3.24*	.21	1. Worchel and ideal
		.12	3. Fels rating scale
55. Safety Conscious	3.46*	.19	1. Worchel and ideal
		.10	2. Worchel and others
		.14	3. Fels rating scale
56. Cares for Property	3.39*	.16	1. Worchel and ideal
		.13	2. Worchel and others
		.16	3. Fels rating scale
57. Evaluation of Employee	5.58**	.17	1. Worchel and ideal
		.17	2. Worchel and others
		.22	3. Fels rating scale
59. Job Contentment	3.44*	-.19	1. Worchel and ideal
		.31	2. Worchel and others
63. Days Outdoor Recreation	2.77*	.11	1. Worchel and ideal
		-.20	2. Worchel and others
		.16	3. Fels rating scale
72. Annual Earnings	6.19**	.21	1. Worchel and ideal
		.16	2. Worchel and others
		.21	3. Fels rating scale

---

[a] *Significant at .05
**Significant at .01

[b] Standard weights with absolute magnitudes of less than .10 deleted

TABLE 17

FIXED EFFECT MODEL--RELATIONSHIPS BETWEEN WORCHEL T-SCORES AND FELS T-SCORES AND DICHOTOMOUS CRITERION VARIABLES

Criterion Variable	F-Ratio[a]	Std. Wt.[b]	Predictor Variable
20. Unskilled employment	3.75*	.30	1. Worchel and ideal
22. Happiest--work	5.40**	.46 .24	1. Worchel and ideal 3. Fels rating scale
29. Happy--family	2.74*	.13 .29	2. Worchel and others 3. Fels rating scale
35. Separated	3.00*	.24 .16	1. Worchel and ideal 2. Worchel and others
39. Share time w/wife--rare	5.65**	.29 .23	1. Worchel and ideal 2. Worchel and others
49. Activity w/ family--usually	3.05*	.27	3. Fels rating scale
59. Minimally employed	2.81*	.33	1. Worchel and ideal

[a] *Significant at .05
**Significant at .01

[b] Standard weights with absolute magnitudes of less than .10 deleted

Analyses of Differences Between and Among Groups

Analyses of Variance

Differences between Experimental and Control Groups.--In order to test the third hypothesis, that differences exist between the Experimental and Control Groups, T-scores for both predictor and criterion variables were subjected to the technique of analysis of variance. The computer program for the analysis of variance contained a formula modified to care for groups with unequal numbers of subjects (Guilford, 1956a). The method permitted comparison of mean scores for the two groups, one group composed of 100 subjects, the other a group composed of 25 subjects. F-ratios determined differences significant at the .05 and .01 levels of confidence. The significant F-ratios obtained from the analyses of variance of T-scores for the predictor variables are shown in Table 18. Criterion variables on which the two groups, Experimental and Control, differed significantly are set forth in Table 19.

T-scores were utilized in the analysis of group differences in order to obtain data which denoted the specific variable on which significant differences occurred; for example, it was found that a significant difference occurred between the Experimental and Control Groups on IQ. However, there is also interest in differences which exist between groups on factors derived from these predictor--personality--and criterion--success--variables. These differences were obtained by subjecting both predictor and criterion factor scores for the groups under consideration to analysis of variance techniques. Table 20 sets forth significant differences between the Experimental and Control Groups on five predictor factors. Table 21 sets forth significant differences between the Experimental and Control Groups on five criterion factors.

TABLE 18

ANALYSIS OF VARIANCE IN T-SCORES FOR 78 PREDICTOR VARIABLES--SIGNIFICANT DIFFERENCES BETWEEN CONTROL AND EXPERIMENTAL GROUPS

Predictor Variable	Mean for		F-Ratio[a]
	Experimental	Control	
5. Reason left home	51.12	43.96	19.22**
9. Adaptability	48.60	53.76	7.69**
12. Definite convictions	48.99	53.88	5.59*
14. Written communication	49.18	54.80	7.73**
23. Positive re mother	50.91	46.04	5.67*
28. Persistent	51.16	45.80	6.81*
29. Strives for success	50.90	46.40	4.78*
31. Self-directing	50.66	46.44	4.04*
42. General happiness	50.78	46.96	4.01*
50. Years job training	53.01	40.00	77.21**
51. Age left home	50.55	47.00	4.12*
53. IQ	48.78	55.12	10.36**
56. Range of attention	49.12	53.16	4.03*
57. Applies reasoning	48.66	53.00	5.01*
59. Psychomotor speed	48.29	55.32	14.72**
62. Creative fluency	48.56	56.32	16.04**
63. Creative flexibility	48.71	57.48	26.20**
64. Creative frequency	49.61	55.20	10.34**
67. Draw-a-man, mental health	48.94	53.76	5.59*
75. Self-direction	49.69	53.20	3.99*
78. Social maturity	49.51	53.92	6.69*

[a] *Significant at .05
**Significant at .01

TABLE 19

ANALYSIS OF VARIANCE IN T-SCORES FOR 80 CRITERION VARIABLES--SIGNIFICANT DIFFERENCES BETWEEN CONTROL AND EXPERIMENTAL GROUPS

Criterion Variable	Mean for		F-Ratio[a]
	Experimental	Control	
1. Residence	48.54	54.36	9.96**
4. Law conformity	50.45	46.12	5.92*
5. Driver's license	49.09	54.00	7.80**
6. Credit rating	50.88	47.92	4.21*
7. Improved financial state	50.69	46.52	4.76*
9. Job expectancy	51.12	45.92	7.44**
13. Advancement possibility	51.11	45.84	7.58**
14. Job in training area	51.05	46.12	6.77*
24. Maintains friendships	48.28	53.56	7.73**
26. Leadership ability	49.07	55.52	12.39**
32. Aid from social agencies	49.61	46.60	4.32*
33. Satisfied with son's job	51.19	44.84	11.28**
34. Reason jobs terminated	50.78	46.32	5.96*
40. Trained for present job	50.99	45.84	6.88**
63. Days outdoor recreation	49.78	54.52	7.12**
65. Time spent reading	49.33	54.36	7.39**
67. Amount of indebtedness	50.36	53.16	4.87*
74. Days spent with parents	49.31	53.32	7.61**
76. Hours in church activity	51.10	46.64	6.16*
78. Hours employed per week	51.74	42.32	29.83**
79. Number of dependents	50.42	53.28	5.09*

[a] *Significant at .05
**Significant at .01

TABLE 20

ANALYSIS OF VARIANCE--PREDICTOR FACTORS--SIGNIFICANT DIFFERENCES BETWEEN CONTROL AND EXPERIMENTAL GROUPS

Predictor Factor	Mean for		F-Ratio[a]
	Control	Experimental	
2. Convergent Thinking	54.44	48.89	6.37*
5. Divergent Thinking	56.92	48.25	16.77**
9. Age Graded Independence	46.12	50.94	4.75*
11. Habilitation Training	58.16	47.93	24.61**
16. Motivated Flexibility	54.56	48.87	6.68*

[a] *Significant at .05
**Significant at .01

TABLE 21

ANALYSIS OF VARIANCE--CRITERION FACTORS--SIGNIFICANT DIFFERENCES BETWEEN CONTROL AND EXPERIMENTAL GROUPS

Criterion Factor	Mean for		F-Ratio[a]
	Control	Experimental	
3. Functional Autonomy	56.48	48.36	14.37**
7. Task Orientation	46.40	50.90	4.10*
9. Family Irresponsibility	55.64	48.58	10.61**
12. Borderline Functioning	54.84	48.74	7.68**
17. Laborer Syndrome	44.44	51.35	10.13**

[a] *Significant at .05
**Significant at .01

Differences Among the Four Experimental Groups

The fourth hypothesis, which relates to differences among the four Experimental Groups, was tested through use of analysis of variance techniques. Significant results from the analyses of variance of T-scores for predictor variables for the four groups are shown in Table 22, while significant F-ratios resulting from analyses of variance of T-scores for the criterion variables for the four groups are set forth in Table 23. Table 24 presents significant differences among the four groups on nine predictor factors. Table 25 sets forth significant differences among the four groups on eight criterion factors.

Chi-Square

In a further test of the third hypothesis, significance of difference between the Experimental and Control Groups, differences were determined for the dichotomous variables. Chi-squares were computed for data arranged in 2 x 2 contingency tables. Yates Correction for Continuity (Guilford, 1956a) was applied to the test of significance. A summary of significant results for differences between the Experimental and Control Groups on dichotomous predictor variables is shown in Table 26, while a summary of the significant differences for dichotomous criterion variables is shown in Table 27.

To test differences among the four Experimental Groups on dichotomous variables, chi-squares were computed. Significant differences among the four Experimental Groups on dichotomous predictor variables are presented in Table 28, and significant differences among the four Experimental Groups on dichotomous criterion variables are presented in Table 29.

TABLE 22

ANALYSIS OF VARIANCE IN T-SCORES FOR 78 PREDICTOR VARIABLES--SIGNIFICANT DIFFERENCES AMONG THE FOUR EXPERIMENTAL GROUPS

Predictor Variable	Mean for				F-Ratio[A]
	State School	Marbridge Foundation	Public School	S.Texas Center	
3. Frequency of medication	47.84	50.84	47.84	52.56	3.21*
4. Enjoyed school	52.72	45.44	52.60	51.28	4.67**
5. Reason left home	50.52	55.92	42.32	55.72	44.39**
6. Optimum performance	48.48	47.32	46.68	54.00	4.08**
8. Cheerfulness	49.20	50.00	45.08	54.40	5.03**
10. Stability of family	41.08	52.40	51.52	54.92	17.03**
13. Recognizes limitations	50.28	55.76	47.80	46.84	6.28**
16. Responsibility	50.36	54.36	45.48	51.16	5.47**
18. Grooming	49.28	54.16	49.72	46.36	3.31*
21. Affectionate, kind	51.40	53.32	46.00	49.12	2.96*
22. Positive re father	44.76	53.12	49.36	51.24	4.29**
27. Cooperative	47.72	54.60	47.80	50.36	3.33*
30. Handles failure well	48.12	54.92	48.20	51.48	3.31*
31. Self-directing	49.72	55.20	45.32	52.40	5.87**
35. Amoral character	52.68	50.12	50.40	46.48	3.61*
36. Expedient character	54.60	47.84	51.24	45.32	7.62**
39. Altruistic character	49.00	50.52	49.00	52.20	2.76*
42. General happiness	49.68	52.28	46.60	54.56	3.97*
43. Degree of contentment	49.00	50.20	46.52	53.40	2.73*
44. Age	53.80	54.88	45.24	46.24	12.28**
46. Weight	48.52	51.52	53.76	43.60	7.14**
49. Years schooling	50.32	50.04	53.80	43.48	5.83**
50. Years job training	54.88	54.72	52.64	49.80	2.71*
51. Age left home	51.00	53.60	45.20	52.40	7.76**
52. Number of handicaps	50.76	53.80	52.52	46.72	3.59*
57. Applies reasoning	48.20	51.48	50.28	44.68	2.93*
58. Reaction time	45.44	46.92	53.32	49.20	4.32**
62. Creative fluency	50.56	49.52	51.68	42.48	6.07**
63. Creative flexibility	49.28	49.08	52.08	44.40	4.88**
64. Creative frequency	49.44	52.16	51.76	45.08	5.09**
69. Index of social class	54.84	45.20	46.28	51.28	6.37**
73. Need achievement	53.96	49.96	46.28	49.64	3.11*

[A] * Significant at .05

** Significant at .01

TABLE 23

ANALYSIS OF VARIANCE IN T-SCORES FOR 80 CRITERION VARIABLES--SIGNIFICANT DIFFERENCES AMONG THE FOUR EXPERIMENTAL GROUPS

Criterion Variable	Mean for				F-Ratio^A
	State School	Marbridge Foundation	Public School	S.Texas Center	
1. Residence	43.80	46.44	51.92	52.00	6.84**
2. Spare time activities	46.84	51.76	48.80	52.32	3.05*
4. Law conformity	44.40	53.84	50.92	52.64	8.41**
5. Driver's license	45.44	48.12	51.80	51.00	4.11**
8. Purchases own clothing	51.92	50.12	46.04	48.52	3.15*
12. Realistic goals	52.64	49.72	45.24	50.48	3.13*
16. Finances from parents	55.24	50.16	44.88	48.52	9.61**
17. Parents regard as mature	53.76	50.28	45.56	47.40	4.59**
21. Respects authority	47.24	50.36	48.64	52.76	2.75*
22. Follows orders willingly	49.00	49.60	45.68	53.92	4.14**
32. Aid from social agencies	46.04	48.84	51.56	52.00	5.63**
36. Initiates activity	48.40	48.36	47.28	54.28	3.79*
62. Hours spent viewing TV	46.60	54.12	51.40	47.20	5.29**
63. Days outdoor recreation	53.40	51.40	49.80	44.52	6.64**
66. Amount of savings	49.00	51.92	50.36	49.00	2.78*
71. Hourly earnings	54.48	50.84	48.56	45.80	5.25**
73. Hours spend in meetings	48.68	53.00	49.72	48.68	3.26*
74. Days spent with parents	43.80	48.84	52.40	52.20	11.17**
75. Hours worked with parents	49.00	50.20	49.00	57.16	13.71**

^{A} *Significant at .05
**Significant at .01

TABLE 24

ANALYSIS OF VARIANCE--PREDICTOR FACTORS--SIGNIFICANT DIFFERENCES AMONG THE FOUR EXPERIMENTAL GROUPS

Predictor Factor	Mean for				F-Ratio[A]
	State School	Marbridge Foundation	Public School	S.Texas Center	
3. Interpersonal Competence	41.80	52.88	51.72	54.04	8.92**
4. Unstable Temperament	49.64	48.16	54.96	46.28	3.37*
5. Divergent Thinking	54.42	52.98	54.66	44.78	6.66**
6. Body Image	49.26	53.94	52.74	42.96	5.27**
9. Age Graded Independence	52.24	55.12	41.80	54.60	14.42**
15. Orderliness of Concept Formation	45.48	51.64	52.36	53.28	3.31*
17. Physical Stamina	52.40	44.72	50.48	52.92	3.91*
18. Absence of Learned Social Maturity	50.24	50.48	44.68	55.12	4.42**
20. Reaction to Physical Stimuli	42.92	48.84	54.00	51.12	5.81**

[A] *Significant at .05

**Significant at .01

TABLE 25

ANALYSIS OF VARIANCE--CRITERION FACTORS--SIGNIFICANT DIFFERENCES AMONG THE FOUR EXPERIMENTAL GROUPS

Criterion Factor	Mean for				F-Ratio[A]
	State School	Marbridge Foundation	Public School	S.Texas Center	
2. Responsible Work Orientation	56.16	52.88	46.48	46.32	7.35**
3. Functional Autonomy	41.68	47.08	51.72	52.96	9.11**
4. Parental Ambivalence	51.36	51.08	53.00	43.96	3.98**
6. Dependence upon Authority	50.16	51.76	53.76	45.76	3.23*
8. Dependence upon Religious Institutions	49.32	56.20	49.80	47.76	3.39*
9. Family Irresponsibility	55.32	46.48	46.28	46.24	7.32**
10. Escape from Responsibility	52.68	48.44	47.36	53.72	2.76*
17. Laborer Syndrome	49.48	47.96	50.16	57.80	5.28**

[A] *Significant at .05
**Significant at .01

TABLE 26

SOURCE OF VARIATION--DICHOTOMOUS PREDICTOR VARIABLES--SIGNIFICANT DIFFERENCES BETWEEN CONTROL AND EXPERIMENTAL GROUPS

Predictor Variable	Per Cent Answering "Yes"		Chi-Square[a]
	Experimental	Control	
3. Endogenous	34%	64%	6.30*
4. Exogenous[b]	66%	36%	6.30*
7. From broken home	61%	28%	7.50**

[a] *Significant at .05
**Significant at .01

[b] .02 of the subjects were possessed with both exogenous and endogenous type handicaps.

TABLE 27

SOURCE OF VARIATION--DICHOTOMOUS CRITERION VARIABLES--SIGNIFICANT DIFFERENCES BETWEEN CONTROL AND EXPERIMENTAL GROUPS

Criterion Variable	Per Cent Answering "Yes"		Chi-Square[a]
	Experimental	Control	
7. Use credit	7%	48%	23.00**
13. Job obtained--self	12%	44%	11.60**
16. Job obtained--counselor	45%	0%	15.73**
21. Employed at present	82%	40%	16.07**
53. No. other employees--5	21%	52%	8.22**
54. No. other employees--1	22%	0%	5.24*

[a] *Significant at .05 level
**Significant at .01 level

TABLE 28

SOURCE OF VARIATION--DICHOTOMOUS PREDICTOR VARIABLES--SIGNIFICANT DIFFERENCES AMONG THE FOUR EXPERIMENTAL GROUPS

Predictor Variable	Number Answering "Yes"				Chi Square[A]
	State School	Marbridge Foundation	Public School	S.Texas Center	
1. Descent--Anglo	21	25	24	8	43.12**
2. Descent--Latin	4	0	1	17	43.12**
3. Endogenous	18	3	1	12	33.69**
4. Exogenous	7	22	24	13	33.69**
7. From broken home	21	15	11	14	8.86*

[A] *Significant at .05
**Significant at .01

TABLE 29

SOURCE OF VARIATION--DICHOTOMOUS CRITERION VARIABLES--SIGNIFICANT DIFFERENCES AMONG THE FOUR EXPERIMENTAL GROUPS

Criterion Variable	Number Answering "Yes"				Chi Square[A]
	State School	Marbridge Foundation	Public School	S.Texas Center	
1. Leisure with peers	19	13	10	11	7.82*
6. Leisure, alone	1	3	7	9	10.00*
9. With friends--most time	10	10	9	2	8.36*
16. Job obtained--counselor	14	18	9	4	17.89**
17. Job obtained--family	3	4	9	14	14.66**
28. Happy--spare time	5	4	7	3	8.06*
40. Friends--peers	20	19	12	22	11.51**
45. Took vacation	6	13	3	3	14.23**
46. Activity with family--never	10	4	2	3	10.06*
47. Activity with family--seldom	5	11	13	5	9.09*
49. Activity with family--usually	5	1	4	9	8.50*
55. No. other employees--0	0	3	0	0	9.27*
56. Is insured	21	18	13	10	12.38**
57. Substantially employed	6	16	10	11	8.27*

[A] *Significant at .05
**Significant at .01

Supplementary Analyses of Variance --Five Group

Analysis of variance techniques were utilized to determine significant differences among the five groups (control group and four experimental groups) on predictor factors; results are shown in Table 30. Significant differences obtained from analysis of variance for the five groups, the Control and each of the four Experimental Groups, on criterion factors are shown in Table 31.

TABLE 30

ANALYSIS OF VARIANCE--PREDICTOR FACTORS--SIGNIFICANT DIFFERENCES AMONG FIVE GROUPS

PREDICTOR FACTOR	MEAN FOR					F-RATIO[A]
	STATE SCHOOL	MARBRIDGE FOUNDATION	PUBLIC SCHOOL	S.TEXAS CENTER	CONTROL	
1. CONTROLLED AWARENESS	51.12	54.60	47.92	49.68	46.60	2.50*
3. INTERPERSONAL COMPETENCE	41.80	52.88	51.72	54.04	49.60	6.99**
4. UNSTABLE TEMPERAMENT	49.64	48.16	54.96	46.28	51.04	2.83*
5. DIVERGENT THINKING	50.96	49.52	51.20	41.32	56.92	10.06**
6. BODY IMAGE	49.42	54.10	52.90	44.02	49.70	4.19**
9. AGE GRADED INDEPENDENCE	52.24	55.12	41.80	54.60	46.12	11.07**
11. HABILITATION TRAINING (LACK OF)	45.84	47.36	47.24	51.28	58.16	7.47**
15. ORDERLINESS OF CONCEPT FORMATION	45.48	51.64	52.36	53.28	47.24	3.12*
17. PHYSICAL STAMINA	52.40	44.72	50.48	52.92	49.52	2.79*
18. ABSENCE OF LEARNED SOCIAL MATURITY	50.24	50.48	44.68	55.12	49.24	3.73**
20. REACTION TO PHYSICAL STIMULI	42.92	48.84	54.00	51.12	52.92	5.51**

[A] *SIGNIFICANT AT .05
**SIGNIFICANT AT .01

TABLE 31

ANALYSIS OF VARIANCE--CRITERION FACTORS--SIGNIFICANT DIFFERENCES AMONG FIVE GROUPS

Criterion Factor	Mean for					F-Ratio^{A}
	State School	Marbridge Foundation	Public School	S.Texas Center	Control	
2. Responsible Work Orientation	56.16	52.88	46.48	46.32	48.24	5.34**
3. Functional Autonomy	41.68	47.08	51.72	52.96	56.48	10.58**
4. Parental Ambivalence	51.36	51.08	53.00	43.96	50.92	3.27*
6. Dependence upon Authority	50.16	51.76	53.76	45.76	48.52	2.47*
8. Dependence upon Religious Institutions	49.32	56.20	49.80	47.76	47.04	3.52**
9. Family Irresponsibility	55.32	46.48	46.28	46.24	55.64	7.51**
12. Borderline Functioning	51.12	48.36	45.76	49.72	54.84	2.96*
13. Acquiescent as to Placement	48.80	55.04	48.72	50.76	46.76	2.59*
17. Laborer Syndrome	49.48	47.96	50.16	57.80	44.44	7.11**

^{A} *Significant at .05
**Significant at .01

FINDINGS

Data from the present study, "Success of Young Adult Male Retardates," are divided into five parts for discussion. Part one focuses upon the basic constituents of criterion--success--factors. Part two is concerned with (1) interpretation of predictor factors, (2) validation of predictors, and (3) statistical analysis of predictor variables to which the total sample did not respond. Part three discusses differences between the experimental and control groups. Part four involves differences which exist among the four experimental groups. Part five, supplementary analyses of data, presents differences which exist among the five groups, the control group and each of the four experimental groups.

Criterion--Success--Factors

Is it practical to reduce 80 variables to a smaller number of common factors in order to permit a closer scrutiny of the relationships among the basic attributes which constitute success? A survey of the results of the study indicates an answer in the affirmative. Perusal of Table 8, a factor matrix of the criterion--success--variables, reveals the number of criterion variables is reduced to less than one-fourth the original number. A survey of the 17 obtained factors derived from the 80 variables as set forth in Table 10 indicates that logical grouping which one may reasonably expect or accept at face value actually does occur. For example, major loadings from variables which report (1) improved financial condition, (2) enjoyment of job responsibility, and (3) positive viewing of supervisor combine with less frequent movie attendance to define Factor 11 which is termed "Work versus Gregarious Satisfaction."

In most instances sharp lines of demarcation are not maintained for personal, socio-civic, and vocational success. Attributes from the three areas of success are combined in basic factors (Cohen, 1960; Cowan & Goldman, 1959; Dubrow, 1960; Kolstoe, 1960). An example of positive interrelations among the success areas exists in Factor 2, "Responsible Work Orientation." Findings show the variables group arbitrarily into the three categories: (1) personal success, with loadings from dependability, happiness, and realistic viewing of capabilities, (2) socio-civic success, with loadings from attends meetings of organizations, treated as mature person by parents, and requires little or no assistance in daily activities, and (3) vocational success, with loadings from improved financial condition, enjoyment of job responsibility, hours worked per week, hourly earnings, annual earnings, and average job tenure.

However, success syndromes of the retarded defined by loadings on some of the factors differ somewhat from those which were expected. Relationships among the three aspects of success are not always positive. In Factor 7, termed "Task Orientation (Withdrawal Syndrome)," social openness does not have a positive relation to vocational success. The factor has positive loadings from variables which serve as measures of vocational success: (1) years expect to be on job, (2) acceptable reason for job termination, (3) maintenance of high performance level, (4) average job tenure, and (5) hours work per week with parents. Yet, the retarded subjects who have positive or successful performance on these traits do not have the ability to meet new people or handle contacts with girls in an acceptable manner, are not leaders, have few or no friends, and derive pleasure from marginal or undesirable leisure activities. A relationship does exist between vocational and social success, but it is a negative rather than a positive relationship. The resulting syndrome is one frequently seen in older retardates whose job represents the sole avenue to accomplishments or contacts outside family environs. If not the relation, certainly the constancy of the relation, between social and vocational adequacy suggested by McPhee and Magleby (1960) appears to be open to question when related to success of retardates. Regard is given Kolstoe's (1960) suggestion that the successful employment of the retarded is highly specific.

Another combination of positive and negative loadings is found in Factor 17, "Laborer Syndrome." Positive and negative loadings from success variables result in a syndrome frequently observed in the performance of migratory or seasonal agricultural laborers. Job happiness is reported and the actual number of hours worked per week is high, but these variables have a negative relationship to leadership ability, permancy of residence, savings, annual earnings, and average job tenure.

Nor can it be said that attributes which combine positively to indicate success will also combine negatively to indicate lack of success. For example, Factor 1, "Effectiveness of Employee," is defined by positive loadings. The employer's positive ratings of employee work habits combine with the parent's belief that schooling contributed to success. These opinions combine with positive ratings for the subject on self-initiative and acceptance of supervisor to suggest a reliable employee who maintains desirable job performance.

By contrast, all major loadings are negative on Factor 16, "Failure Syndrome." Moreover, only three of the nine attributes defining this syndrome are negative loadings for variables which define Factor 1, "Effectiveness of Employee." In Factor 16, "Failure Syndrome," lack of leadership and lack of dependability combine with undesirable leisure activities, sharing of few or no activities with parents, failure to handle money well, the parent's belief that schooling contributes little or nothing to success, and frequent absences from work. The combination suggests a loosely integrated personality who for some reason has not identified closely with his parents. The preponderance of negative loadings from personal and socio-civic success items on factors defining failure or borderline success syndromes points to Cohen's question (1960): Is the failure in the retardate attributable to difficulty in socio-civic or in vocational areas?

When loadings which define Factor 13, "Acquiescent as to Placement," are reviewed, consideration is given Cowan and Goldman's (1959) suggestion that in some instances success can be attributed to job placement rather than to job training. In Factor 13 job tenure increases when employment is in an area for which the subject has received training; yet, accompanying these positive loadings is a negative loading in leadership. In analyses of differences between the trained group and the untrained group presented later in the study, it is found that the trained group has met with greater vocational success, but their job placements have frequently been accomplished through the efforts of counselors. For these reasons it appears that any interpretation of Factor 13 should give consideration to the influence of skilled counselors.

Evidence of the multidimensionality of success (Mann, 1959; Peterson & Smith, 1960; Toops, 1944) is supplied by the study. Opinions of the ten experts who contributed judgments concerning the constituents of success are substantiated; success is not a unitary trait, and the success of an individual probably can be defined best by a profile of success attributes or factors. Seventeen success factors have been derived from a factor analysis of 80 criterion--success--variables. Hypothesis One is accepted: The numerous variables which have been proposed by writers as criteria for personal, socio-civic, and vocational success are represented by a smaller number of common factors so that scores for "factors-in-persons" are derived (criterion measures).

Predictor Variables

Interpretation of Predictor Factors

An analytical answer is found in the factoring of predictor variables to the question: What clustering of personality and cognitive attributes exists in the young adult male retardate? Review of the predictor factor matrix as set forth in Table 5 and Table 7 reveals combinations which are expected on the basis of logical reasoning. Examples are: (1) height and weight, vital statistics variables, define a factor termed "Body Image" and (2) optimum performance, emotional stability, cheerfulness, adaptability, need achievement, and lack of accompanying physical handicaps define a factor termed "Motivated Flexibility."

The relationship between (1) Vineland Social Maturity Scale, (2) intelligence quotient, and (3) social class, assumed by Doll (1953), does not exist in this study of retardates. However, it is kept clearly in mind that any discussion of the relative merit of intellectual factors as compared to social maturity and social class has to stay within the intellectual range of retardation. The basic premise for selection of the population for this study is intellectual subnormality, i.e., the intellectual deviation of the sample subjects is seriously below that of the general population. The major method for defining and controlling the sample for both the experimental and control groups is intelligence as measured on individual intelligence tests.

In the predictor factor matrix the four subscores of the Vineland Social Maturity Scale combine with the variable applies reasoning from Listening (Reasoning) and ratings from Interpersonal Impressions Rating Scale on psychosexual integration, grooming, and the two higher levels of character development--conscientious and altruistic--to define a factor termed "Social Maturity." These findings suggest that is is not the convergent thinking measured by either the Stanford-Binet, Revised or the WISC, but the observed maturity in daily living and the ability to apply reasoning to practical situations that relate more closely to social maturity. In terms of a facet of intelligence other than convergent thinking, tenability is given Piaget's theory (1960b) of a relationship between social maturity and certain aspects of intelligence through the reasoning processes.

Two Vineland subscores, Occupation and Socialization, combine with scores on such items as responsibility, persistence, and cooperation and with two subscores from Peck's Sentence Completion in the factor "Controlled Awareness." Not only is there a loading from conforming, a level of character development, on the factor, but the attributes present in other loadings combine to suggest conformity. Subscores from Peck's Sentence Completion indicate the conforming person is also a self-accepting, motivated person. Perhaps conformity in the retardate as shown in the above factor is not an indication of passivity, but is superego motivation, striving to meet social standards and parental injunctions.

The major loadings from Index of Status Characteristics are on a factor termed "Interpersonal Competence." One infers from the structure of the factor that higher social class is related to parents' participation in social activities, family stability, continued residence at one address, positive attitude toward family, and a conforming level of character development.

The factor, "Body Image," also has a loading from Index of Status Characteristics. Here social class and parents' participation in civic activities combine with actual physical size (height and weight), with sociability, and with optimum performance to suggest persons from higher social class are more motivated, are more sociable, and are larger physically.

A similar combination of attributes is found in the factor termed "Physical Stamina." In this instance lower social class combines with less frequent participation by parents in civic activities. Retardates from the lower social classes report fewer physical handicaps, serious illnesses and accidents, but they have not achieved a realistic acceptance of their limitations. Although the literature indicates great interest in the influence of social class on personality formation and intellectual functioning (Haggard, 1954), findings from the present study strongly suggest that personality and social development in the retardate are functions largely separate from intellectual development.

In the functioning of the retarded as well as in the functioning of the normal, viewing of convergent and divergent thinking as two facets of intellect (Guilford, 1959; McGuire, 1960) appears to be appropriate. The structure of the factor termed "Convergent Thinking" is determined by major loadings from IQ (Stanford-Binet, Revised or WISC), range of attention or listening aptitude (Listening Test of Vocational Aptitude), the expression of definite convictions and written communication (Interpersonal Impressions Rating Scale), and verbal facility (Rhymes).

Loadings from the range of attention, observed sociability, readiness to respond, and self-esteem on the factor, "Responsiveness," suggest responsiveness in the retardate, as in the normal, is an outward manifestation of intellectual functioning. Can one hypothesize that responsiveness results in part from acuity in auditory perception and auditory memory? Perhaps future research on the auditory perception of retardates will seek to ascertain an answer.

"Divergent Thinking," also a cognitive factor, represents a limited form of creativity or an ability to apply knowledge and reasoning to novel situations as measured by Alternate Uses, Listening (Reasoning), and Rhymes. The relationship between social class and creative thinking is determined, but contrary to Stern's expectations (1963), the relationship is found to be very low. Of extreme interest is the loading from expedient, a level of character development, on this factor. Remembering that the expedient person is one who lives in the immediate present, one who tends to obtain immediate gratification of impulses with little conscience or superego (R. F. Peck & Havighurst, 1960), it appears that the limited creativity in the retardate, like the creativity in the intellectual, is found in persons capable of accepting their own impulses (R. F. Peck, 1958; Stein, 1963). These are persons who, on occasions, permit bits of unbridled id to break through the buffer zones of the ego and the barriers of the superego.

The definition of two factors, "Divergent Thinking" and "Orderliness of Concept Formation," by subscores from Alternate Uses tends to confirm Tisdall's (1962) belief that more than one aspect of creativity is measured by the instrument. The more noteworthy aspect of the findings is the derivation of two factors , which indicate the presence of two aspects of creativity, from responses of the retarded (Masland *et al*, 1958; Stern, 1963).

Factors defined by scores from personality instruments, both self-report and projective techniques, indicate the combinations of attributes present in the positive or healthy personality are not the same combinations present in the negative or unhealthy personality. In the factor, "Openness to Stimuli," mental health, as measured by *Bown's Self-Report Inventory*, and lack of anxiety, as reported by *Castaneda Manifest Anxiety Scale*, relate to physical health, to happiness and enjoyment of life, as reported by the subject on the *General Satisfaction Scale*, and to success in interpersonal relations, as measured by *Peck's Sentence Completion*. Because of the interest evidenced concerning the effects of anxiety on the performance of the retardate (Cochran & Cleland, 1963; Iscoe & Cochran, 1960), the factor, "Openness to Stimuli," which contains the only major loadings for *CMAS*, is closely scrutinized. The structure of the factor is logical. Three self-report instruments have major loadings on the factor, but the presence of loadings from projective techniques, and from parent interviews as well, indicate that type of instrument does not determine the factor structure.

The value of biographical information is emphasized in the factor, "Optimum Performance." Here health, lack of physical handicaps, and little need for medication load in with optimum level performance to define the factor and to indicate the relation of physical well-being to motivation in the retarded.

Another aspect of motivation is defined by loadings from four subscores of Peck's Sentence Completion in the factor, "Self-Realizing Achievement Drive." Because of the low reliability coefficient, .49, obtained in a pilot study for the Lie Scale, subscore of CMAS, interpretation of its loading, truthfulness, on the factor is not attempted.

Parent's report of the son as an emotionally stable person, a person of cheerful disposition who performed at an optimum level and who adapted to changes in routine, is found to be related to a lack of accompanying physical handicaps in the factor termed "Motivated Flexibility." A loading from need achievement, or motivation, as measured by Peck's Sentence Completion, also contributes to the structure of the factor. One can postulate either that the parent's positive viewing of the son's action and of his lack of physical handicaps promotes motivation on the part of the son, or that a highly motivated son who is free from handicaps promotes a positive viewing of his action by his parent. Reciprocal attitudes are indicated.

Further confirmation of the circular influence of parent-son attitudes is found in the factor, "Unhappy Temperament." Loadings from the parent's reporting of an unstable son combine with an observed lack of affection and kindness on the part of the subject and with the subject's report on General Satisfaction of unhappiness with life.

Another syndrome of negative attributes is observed in the factor, "Absence of Superego." Ratings on amoral, the lowest level of character development, combine with lack of skill in interpersonal relations, with lack of motivation from Peck's Sentence Completion, and with a poorly integrated personality as determined by Draw-A-Man, Mental Health. Note, it is projective techniques, indirect measures of personality, not self-report inventories, which have elicited information that relates to an observed amoral level of functioning.

A serendipitous finding appears in the factor, "Age Graded Independence." Lack of psychomotor speed, as measured by Dotting, is related to the age of the person when residence was established away from parents. Implication is that persons poor in motor skill (which suggests the possibility of central nervous system involvement) tend to postpone attempts at independence of residence. The major loading for reaction time, as measured by Discrimination Reaction Time, is not on this factor. Reaction time defines its own factor (Guilford, 1959; McGuire, 1960), and in so doing indicates in the retarded as in the normal it is a separate entity.

The structure of two factors, "Controlled Awareness" and "Interpersonal Competence," indicates that in the mental retardates included in the study a well-integrated personality relates positively to R. F. Peck and Havighurst's

(1960) third level of character development, conforming, and relates negatively to the first and second levels, amoral and expedient. The fourth level of character development, irrational-conscientious, and the fifth level, rational-altruistic, combine with positive loadings from the four subscores of Vineland Social Maturity Scale and from Listening (Reasoning)to define the factor, "Social Maturity." Comparison of the combinations derived from this factor analytic study with both R. F. Peck and Havighurst's (1960) and Piaget's (1960a) levels of character development suggests that Peck and Havighurst's two higher levels, irrational-conscientious and rational-altruistic, combine into one broader level in retardates. A theory which provides the educable mentally retarded with four levels of character development, one less than R. F. Peck and Havighurst (1960) and one more than Piaget's (1960b), might be explored.

It is emphasized that the foregoing review of predictor factors serves only as suggestions of personality patterns existing in retardates. The data confirm the wisdom of Jastak's suggestion which points to "the absolute necessity of viewing the intellectual factors in terms of the personality ones" (Masland et al, 1958).

Validation of Predictors

The value of predictor factor scores and scores on dichotomous predictor variables as indicators of success was assessed by determining their relative weights for, and strength of association with, criterion factor scores and scores on dichotomous criterion variables. Predictor factors were validated on the 61 dichotomous criterion variables through the use of fixed effect models (Graybill, 1961). Twenty-one significant F-ratios resulted. The fixed effect model tested the relationships between the seven dichotomous predictor variables and the 17 criterion factor scores. Three significant F-ratios resulted from this analysis.

Phi coefficient was the method employed to determine relationships existing between dichotomous predictor and dichotomous criterion variables. The necessity to dichotomize data on certain variables was indicated because entry of answers to this type of variable on a five-point scale would result in value judgments by the interviewer, i.e., it is impossible to justify a higher rating for "spare time spent with peers" than for "spare time spent with family." The relatively large number of variables of this type appear to result in diffuse dispersion of the explicable variance across a number of statistics not formally related to the data in the analysis. The conclusions drawn are:

(1) there is essentially a null relationship between the dichotomous predictor and criterion variables and/or (2) the power function of the technique involved is insufficient to allow for the discrimination of the true relationships. This is due to the inability to consolidate the dispersion across variables (Roy, 1957).

Point scale and continuous predictor variables were factor analyzed. Then the 21 obtained predictor factors were validated on the 17 criterion--success--factors through the use of multiple regression techniques.

The predictor factor, "Controlled Awareness," comprised of major loadings from the Interpersonal Impressions Rating Scale, Peck's Sentence Completion, and Vineland Social Maturity Scale, contributed standard weights of .10 or above in the significant prediction of eight success factors and 14 dichotomous criterion variables. Validation of items from the Interpersonal Impressions Rating Scale indicates this measure holds promise as a predictor or screening device. The instrument can be utilized as an evaluative device, not only for admission to training, but also as a progress chart to determine areas of strengths and weaknesses. In the later instance, information to be derived from the employer's interview schedule would be supplied by the subject's work or training supervisor.

Another predictor factor, "Interpersonal Competence," with major loadings from Interpersonal Impressions Rating Scale, Peck's Sentence Completion (Family Dynamics subscore), Dotting, Index of Status Characteristics, ratings on internal stability of home, and past places lived, also contributes to the significant prediction of eight success factors as well as twelve dichotomous criterion variables. Structure of the factor tends to confirm Michael-Smith's (1956) and Sarason's (1953) belief in the influence of the parents' life style on the functioning of the retarded son. The influence of social class, as measured by Index of Status Characteristics, and parents' activities is noted again as the two variables combine with physical attributes in two factors, "Body Image" and "Physical Stamina," to contribute to the significant prediction of seven success factors and nine dichotomous criterion variables. Implications are that Kolstoe and Shafter's (1961) interest in the relation of social class to success of retardates is well-placed.

The factor, "Social Maturity," defined by major loadings from the four subscores of Vineland Social Maturity Scale, from Listening Test of Vocational Aptitude (Reasoning), and from the two higher levels of character development, conscientious and altruistic, contributes to the significant prediction of seven success factors and eight dichotomous criterion variables. Loadings from subscores of the Vineland

Scale on the factor, "Social Maturity," as well as on the factor, "Controlled Awareness," demonstrate these subscores to be some of the most efficient predictors of vocational and socio-civic success utilized in the study. The results support Doll's (1953) belief in the importance of assessing social maturity.

Because IQ by itself has been considered a poor predictor of vocational potential (Brainerd, 1954; Cowan & Goldman, 1959; Dubrow, 1960; Goldstein, 1959; Kolstoe, 1960), attention is given the criterion--success--factors which are predicted significantly by the factor termed "Convergent Thinking" (remembering, however, that the factor is defined not by IQ alone, but also by loadings from Rhymes, Listening Test of Vocational Aptitude, Dotting, and two items from Interpersonal Impressions Rating Scale). If cognitive functioning does not predict vocational potential, what does it predict (Kolstoe, 1960)? The answer supplied by the study is that it does predict aspects of vocational success as well as aspects of personal and socio-civic success. Standard weights of .10 or above are noted for "Convergent Thinking" on five success factors concerned with self-assurance, leadership ability, desirable use of leisure, financial independence, job attendance, and job performance. Findings from the present study substantiate Lorge's statement that "to minimize the importance and usefulness of intelligence tests would be a disservice" (Lorge, 1959, p. 270). Perhaps the correct admonishment is: Don't expect intelligence tests to divulge everything you need to know.

The factor, "Divergent Thinking," a factor derived from Alternate Uses, Listening Test of Vocational Aptitude (Reasoning), and Rhymes scores, contributes in the prediction of six criterion factors. Only two of these criterion factors, both negative aspects of success, "Dependence upon Authority" and "Failure Syndrome," also have prediction contribution from the factor "Convergent Thinking." The findings suggest not only the presence of two aspects of cognitive functioning--convergent and divergent thinking--in the retardate, but they demonstrate the distinction between the two as predictors of success (Guilford, 1959).

Data obtained from the study tend to answer Gallager's (1959) question: Is the retardate sufficiently perceptive to report his feelings accurately? The structure of four factors is defined by loadings from instruments included in the battery for purposes of personality assessment: Peck's Sentence Completion, Bown's Self-Report Inventory, CMAS, General Satisfaction Scale, and Draw-A-Man, Mental Health. These factors relate significantly to ten success factors and to 16 dichotomous variables. The three areas of success (personal, vocational, and socio-civic) are included in the prediction. When two types of personality instruments--projective and self-report--are compared, the projective techniques, particularly Peck's Sentence Completion, appear to be more valid predictors. Indication is that feelings and attitudes are more accurately reported when the retardate makes no conscious effort at self-report.

Although the factor termed "Reaction to Stimuli" is comprised of only one major loading, Discrimination Reaction Time, and had an Eigenvalue of only .96, it does contribute to the significant prediction of five success factors and nine dichotomous criterion variables. The measured psychophysical reaction time is related to the ability to operate a motor vehicle, self-assurance, responsibility in marriage, and is negatively related to a failure syndrome. Psychomotor skill as measured by Dotting has major loadings on "Convergent Thinking" and "Age Graded Independence," and in most instances appears to predict different aspects of success than those predicted by Discrimination Reaction Time.

One or more of the four predictor factors, "Body Image," "Age Graded Independence," "Physical Stamina," and "Optimum Performance," defined by loadings from such vital statistics as physical size, handicaps, number of serious illnesses and accidents, need for medication, and social class, contribute to the significant prediction of 12 of the 17 success factors and also to the significant prediction of 15 dichotomous criterion variables. These data support statements concerning the predictive value of data obtained from biographical information (Cowan & Goldman, 1959; Lorge, 1959; McPhee & Magleby, 1960; Michael-Smith, 1956).

Areas in which predictor variables were not validated

Because of the concern in predictive studies for what is not predicted as well as what is, attention is addressed to the five criterion--success--factors that do not have prediction significance at the .01 or .05 levels of confidence. Included in these factors are:

Factor No.

5. Job Satisfaction is defined by subscores from the self-report instrument Job Satisfaction and from the subject's statement concerning the number of years he expects to remain on his present job. Eigenvalue is 2.31.

10. Escape from Responsibility has negative major loadings from the subject's viewing of his capabilities, job happiness, savings, ability to perform under pressure, and accept responsibility, but positive loadings from music enjoyment. Eigenvalue is 1.44.

11. Work versus Gregarious Satisfaction has loadings from improved financial state, regard for supervisor, enjoyment of job responsibility, and movie attendance. Eigenvalue is 1.44.

12. Borderline Functioning has major loadings from the employer's statement that the subject lacks physical stamina, does not make good suggestions or handle company money, and is not polite to customers. However, these undesirable job attributes are found in persons who handle leisure time successfully. Eigenvalue is 1.41.

15. Self-Directed Responsibility has loadings from desirable use of credit, acceptable leisure activities, on-the-job neatness and carefulness, but negative loadings from compatible employees and exercises right to vote. Eigenvalue is 1.22.

Criterion variables, whose major loadings define success factors which are not predicted significantly, in most instances are one of two things: (1) variables which also contribute major loadings to other factors which are predicted significantly or (2) variables which are predicted by scores from Worchel's Rating Scale for Child Concept and from Fels Parent Behavior Rating Scale. However, 10 of the 80 point scale and continuous criterion variables do not have major loadings on other factors which are predicted significantly. Of the 10 unpredicted criterion variables, seven are reported by the subject.

Subscores from Job Satisfaction Scale comprise three of the seven unpredicted success variables which are reported by the subject. Why is there failure in the prediction of the success factors, "Job Satisfaction," which is defined by major loadings from items on the self-report instrument, Job Satisfaction Scale? Analysis of results reveals two items from the Job Satisfaction Scale are predicted. Job unhappiness has a major loading on another criterion factor, "Laborer Syndrome," which has significant prediction. The other item, job contentment, has significant relation to T-scores from Worchel's Rating Scale for Child Concept and from Fels Parent Behavior Rating Scale.

In a separate study of the two companion instruments, General Satisfaction Scale and Job Satisfaction Scale, five predictor variables, items from the General Satisfaction Scale, are multiply correlated with each of the five criterion variables, items from Job Satisfaction Scale. The multiple correlation coefficient for the first item, job happiness, is significant at the .05 level. The multiple correlation coefficient for the second item, job contentment; the fourth item, total job satisfaction; and the fifth item, job unhappiness, are significant at the .01 level. The multiple correlation coefficient for the third item, job satisfaction, is not statistically significant. These findings indicate the instrument, General Satisfaction Scale, is useful in the prediction of four of the five attributes measured in the Job Satisfaction Scale.

Two of the unpredicted criterion variables are concerned with a categorizing of leisure interests and civic participation. They are movie attendance and exercises the right to vote. Had interest inventories been utilized as predictor variables, failure in prediction of these two variables possibly would have been prevented.

Regard for supervisor and compatible employees, two unpredicted criterion variables derived from subject's attitude, deal with interpersonal relations in a vocational setting. Another, the ability to use credit successfully, is based on the subject's credit record. Two additional variables, employee's health and stamina and successful handling of company money as reported by the employer, are not predicted at a significant level of confidence. These variables appear to be important aspects of vocational success, and the need to achieve their prediction continues.

Fixed effect models and phi coefficients

Three dichotomous variables were deleted. From a population of colored, Anglo, or Latin educable mentally retarded male youths, ages 18 through 26, IQ 50 to 75, who were graduates of habilitation training classes at either Marbridge Foundation, State Schools, South Texas Habilitation Center, or from public school classes in Texas, a random sample provided subjects which were either Anglo or Latin; therefore, the dichotomous variable, Race-Colored, had no entries and was not included in the analysis of data. Two other dichotomous variables had no entries and were also deleted from the study; they were Wife Do Things Together--Three-Fourths of the Time and Wife Do Things Together--Less Than Half of the Time.

The 26 dichotomous criterion variables which are not predicted at the .05 level of confidence are:

5. Leisure with parents
10. With friends--part of time
11. With friends--seldom
12. With friends--very seldom
15. Job obtained--Vocational Rehabilitation
17. Job obtained--family
18. Skilled employment
25. Happiest--close friends
26. Happiest--civic activity
27. Happy--work
28. Happy--spare time
30. Happy--close friends
31. Happy--civic activity
33. Engaged
38. Share time with wife--half
42. Friends--siblings

45. Took vacation
46. Activity with family--never
48. Activity with family--part time
50. Activity with family--always
51. No. other employees--50
52. No. other employees--25
53. No. other employees--5
54. No. other employees--1
55. No. other employees--0
58. Unsubstantially employed

Difficulties concerning the statistical analysis of dichotomous variables were discussed earlier in this section of the study. There is suggestion that these difficulties contribute in the failure to predict dichotomous criterion variables. The degree of contribution, however, remains problematical.

Prediction achieved

The 78 point scale and continuous predictor variables and the seven dichotomous predictor variables included in the study were derived from scores on 16 instruments and from 19 biographical information variables. The variables reduced to 21 factors. The degree of validity possessed by the 21 factor variables and the seven dichotomous predictor variables was determined by using the 17 success factors and 61 dichotomous success variables as the criteria. From these data it was concluded that factor variables and dichotomous variables were reasonably valid measures which explained or predicted a large proportion of the many aspects of success included in the present study. Hopefully, the instruments included in the study can become the core of a battery of tests to be used in screening candidates for habilitation training. That they do not represent the ultimate in screening devices is realized, but insofar as can be ascertained they are the most valid battery of instruments offered for this purpose to date. Hypothesis Two is accepted; scores on the measures used as predictor variables are reduced to a set of "factor variables" which have significant positive relationship to the personal, socio-civic, and vocational success of the mentally retarded individuals studied.

Statistical Analysis of Variables to Which Total Sample Did Not Respond

Only 93 of the 125 subjects had parents available to respond to *Worchel's Rating Scale of Child Concept* or to be rated on *Fels Parent Behavior Rating Scale--Acceptance or Rejection*. This discrepancy prevented inclusion of scores from these two instruments in the factor analyses and necessitated a separate study of their predictive ability. Multiple regression of Worchel's and Fels' T-scores upon T-scores for the 80 criterion variables was accomplished. The 25 significant F-ratios, 13 at the .05 and 11 at the .01 level of confidence, which result from the statistical technique, are shown in Table 16. Significant relationships are also found to exist between these two instruments and seven dichotomous criterion variables; these are presented in Table 17. Review of the findings suggest that the parent's acceptance or rejection of the son as measured by these two instruments is related to parent's reports of the son's performance in seven success areas which include such traits as dependability, self-initiative, and skill in handling finances. Also, the parent's acceptance-rejection as measured by scores from Worchel's and Fels is found to be related to the rating given the son by his employer on eleven work habits. The number of significant F-ratios tends to confirm Macmillan's statement that "success is seen as the end product of a process beginning with and having as an important determinant the parental attitudes to the retarded child" (Macmillan, 1962, p. 418).

Still undetermined, however, is the relationship of parent attitudes to such personality attributes as self-direction, anxiety, and interpersonal relations. In an effort to assess these relationships, the two scores from Worchel's Rating Scale of Child Concept and the one from

Fels Parent Behavior Rating Scale were included in a separate factor analysis of scores for the 93 subjects on point scale and continuous predictor variables.

Again as in J. R. Peck and Stephens' study (1960), a relationship is found between the parents' acceptance or rejection as observed by the interviewer and rated on Fels Parent Behavior Rating Scale and the parent's acceptance or rejection as measured by the parent's rating of the retarded son on Worchel's Rating Scale of Child Concept. However, factor analysis reveals that ratings on Fels combine with ratings from Worchel and Ideal to define factors, not with with ratings from Worchel and Others. The finding implies Fels--Acceptance or Rejection and Worchel and Ideal tend to measure the same aspect of parent's attitudes, but that Worchel and Others measures other aspects of parental acceptance.

Review of factor loadings for Worchel and Others suggests idiosyncratic findings. In one factor this measure combines positively with an expedient level of character development, with parents' reports of emotional stability, and with subject's report of contentment. Yet, in another factor, scores obtained from this measure combine negatively with (1) creativity as measured by Alternate Uses, (2) mental health as measured by Bown's Self-Report Inventory, and (3) enjoyment of children. There appears to be a tendency in these parents to be more accepting, and perhaps less realistic, of the son when he is compared with other young males than when he is compared with the ideal young male.

There is indication that the parent's acceptance of the retarded son as determined by (1) Worchel and Ideal and (2) Fels Parent Behavior Rating Scale is positively related to the subject's enjoyment of life, mental health, regard for others, motivation and optimum performance, ability to reason, interpersonal development, and to higher levels of character development. However, mental retardates from homes of higher social status appear to be more rejected, are frequently multiply handicapped, and require medication; also, these subjects lack ability in divergent thinking and social maturity.

The above findings tend to confirm Sarason's assumption that "the subnormal individual . . . is influenced by and in turn influences the familial and social milieu into which he is born and in which he develops" (Sarason, 1953, p. 646). The acceptance or rejection held by the parent for this retarded son appears to influence the son's attitude toward self and others, and both parent's and son's attitudes are determinants of the son's success in life.

Differences between Experimental and Control Groups

Predictor Variables

Through analysis of variance techniques, reliable findings were obtained which indicate that significant differences exist between the Experimental Group, subjects who had habilitation training, and the Control Group, those who had no habilitation training, on 21 of the 78 point scale and continuous predictor variables. Findings are set forth in Table 18. The Experimental Group had the higher means, significant at the .01 level on (1) acceptable reason for leaving home and (2) years of habilitation training. At the .05 level of confidence the Experimental Group had higher means on (1) positive attitude toward mother; (2) persistent; (3) strives for success; (4) reliable, responsible, and self-directing as rated on the *Interpersonal Impressions Rating Scale*; (5) general happiness as reported on *General Satisfaction Scale*; and (6) chronological age when left home.

The Control Group had the higher means significant at the .01 level on (1) adaptability and written communication as rated on the *Interpersonal Impressions Rating Scale*, (2) IQ as measured by the *Stanford-Binet, Revised* or the *WISC*, (3) psychomotor speed as measured by *Dotting*, and (4) creative fluency, creative flexibility, and originality as measured by *Alternate Uses*. The markedly superior performance by the Control Group on fluency, flexibility, and originality infers that these aspects of divergent thinking are not traits which are established through habilitation training programs. At the .05 level of confidence the Control Group obtained higher means on (1) definite convictions as rated on Interpersonal Impressions Rating Scale, (2) range of attention or listening ability and applies reasoning to practical situations as measured by the Listening Test of Vocational Aptitude, (3) mental health as measured by the projective technique Draw-A-Man, Mental Health, and (4) self-direction and social maturity as measured by the Vineland Social Maturity Scale.

Differences on dichotomous variables as set forth in Table 26 show 61% of the trained Experimental Group came from broken homes as compared with 28% of the untrained Control Group. Also, in the Experimental Group 66% of the retardation is classified as exogenous, whereas only 36% of the Control Group is in this category.

It is acknowledted that instruments selected for future use as predictors of success were administered to experimental subjects, not prior to placement in habilitation classes but after completion of habilitation training. That the effects of such training may influence performance on predictor as well as on criterion variables is also acknowledged. However, even with this point in mind, differences which exist between the two groups strongly suggest superior ability on the part of the Control Group, the group who had no habilitation training.

The above differences exist despite the care exercised in obtaining random samples and the care exercised in drawing the control sample from the records of school systems which had no special education habilitation classes in existence at the time the subjects were in school (Johnson, 1962). Data strongly indicate that the group who had not received training is superior in cognitive and psychomotor functioning, in divergent thinking, in self-direction, and in social maturity. Why is this? The significantly superior performance of the group who had no training on a test of psychomotor speed was not maintained on a test of discrimination reaction time. Why? Perhaps a partial answer is found in the fact that 17% of the group who had habilitation training possess severe physical handicaps versus 8% of the group who had no training. The suggestion that physical involvements impair performance is substantiated by the fact that the etiology of 66% of the trained group is exogenous in nature versus 36% of the untrained group. These findings lend credence to the belief that it is the more handicapped person, both physically and intellectually, as well as the one who has experienced less home stability who is placed for training in public school special education classes or in institutional settings.

Attention is then addressed to the lack of differences between the two groups on a large portion of personality measures. Here findings tend to support Johnson (1961) who found no significant difference between mentally handicapped students in regular classes and those in special classes on scores from a measure of personality, California Test of Personality. However, it is remembered that the lack of difference reported in the present study in personality development exists for groups who do have differences in severity of handicaps and in level of intellectual functioning. The lack of difference on personality measures is congruent with expectations only if one believes that intellectual or physical impairment has no influence on personality development. However, personality theorists in general (Hall & Lindzey, 1957) concede a closer relationship between intellectual, physical, and personality development. Therefore, it appears that in some way, perhaps during habilitation training, the Experimental Group, those subjects with more severe handicaps, have managed to overcome the debilitative effects of these impairments on personality development.

No significant differences are found between the two groups on freedom from anxiety and truthfulness as measured by the CMAS; on the five personality attributes--self-concept, need achievement, interpersonal development, attitude toward job and employer, and family dynamics--as measured by Peck's Sentence Completion; or on level of character development as rated by the interviewer. Factor analysis of predictor variables indicates Draw-A-Man, Mental Health is a measure of psychosexual adjustment. The Control Group achieves the higher mean on this variable, but no significant difference exists between the two groups on Bown's Self-Report Inventory, a measure of mental health.

On general happiness, a subscore of General Satisfaction, the trained group has the higher mean, but on the other two subscores, enjoyment of life and degree of contentment, no significant differences exist. Nor are there significant differences in social class. Of interest is the significantly superior performance by the untrained group on self-direction and social maturity, subscores on the Vineland Social Maturity Scale, but on the other two subscores obtained from the instrument, occupational maturity and communicative maturity, no significant differences exist. Relative to these findings is the fact that the Control Group was rated by the observer as possessing significantly superior performance in written communication; yet, differences between the two groups are not significant on verbal facility as measured by Rhymes. In summary, where differences existed between the two groups on predictor variables, the major portion of these differences revealed superior performance on the part of the untrained Control Group, particularly in areas of cognitive functioning, which are generally viewed as being influenced by level of intellectual development. Therefore, superior performance in certain success areas by the Experimental Group, as discussed in the section which follows, was achieved despite lower levels of cognitive, social, and psychomotor functioning as measured by instruments utilized in this study, and despite the fact more of this group were from broken homes, and also despite a larger, but not significantly larger, percentage of severe physical handicaps. Was this success made possible through their persistence, their striving, their sense of responsibility, and their general happiness, and/or their period of vocational training?

Criterion Variables

Perusal of the analysis of variance on the criterion--success--variables as set forth in Table 19 reveals the untrained Control Group has the higher mean, significant at the .01 level on (1) independence of residence, (2) driver's license, (3) maintains friendships, (4) leadership ability, (5) days outdoor recreation, (6) time spent reading, and (7) days spent with parents. At the .05 level of confidence the untrained Control Group has the higher mean on (1) amount of indebtedness and (2) number of dependents.

A review of significant variations between the Experimental Group and the Control Group on dichotomous variables is set forth in Table 27. These findings show a large per cent of the untrained Control Group used credit, had self job placement, and obtained employment in businesses that had a minimum of five employees more frequently than did the Experimental Group.

The above findings set forth areas in which the Control Group has the higher mean. Consideration is then given areas in which the Experimental Group is found to have the higher ratings.

The trained Experimental Group has the higher mean, significant at the .01 level of confidence on the following success factors: (1) job expectancy, (2) advancement possibility, (3) trained for present job, (4) hours employed per week, and (5) satisfied with son's job. The trained group also has higher means, significant at the .05 level of confidence on (1) law conformity, (2) credit rating, (3) improved financial state, (4) job in training area, (5) does not require aid from social agencies, (6) acceptable reason for job termination, and (7) hours in church activities.

When dichotomous variables were subjected to chi-square techniques, the trained Experimental Group was found to have obtained job placement through a counselor more frequently than the Control Group. The number of Experimental

Subjects employed at the time of interview was significantly greater also. Eighty-two per cent of the Experimental Group was employed at the time of the interview versus 40% of the Control Group. Although not significantly greater, the average job tenure for the Experimental Group was 10.34 months versus 5.56 months for the Control Group.

Differences which exist between trained subjects and untrained subjects indicate the untrained group exhibited greater initiative in some areas of socio-civic development. These persons reported a greater number of friends, and in the parent's opinion the retardate's leadership ability exceeded that of the trained group. These subjects also reported more time spent in outdoor recreation and reading. However, results do not clearly indicate a superior handling of the acquired independence. Persons who had no training attained greater independence of residence and listed a greater number of dependents on their withholding statements, but they also accepted more aid from social agencies. More of this group obtained driver's licenses, but the group also had a significantly greater number of law violations. A larger per cent of those who received no training used credit, but their credit rating was significantly poorer and they reported a greater amount of indebtedness. Although a significantly greater number of the Control Group spent more time with their parents, it is remembered, parenthetically, that a significantly smaller number of this group came from broken homes.

Results indicate that subjects who had habilitation training met with significantly greater success in some vocational areas. A significantly larger number of the trained group were employed at the time of the interview, 82% versus 40% for the untrained. While employed they averaged working more hours per week, and when employment did terminate the trained group had a more acceptable reason for the termination. Although not significantly greater, the average job tenure of the trained group exceeded that of the untrained group. To what may these differences be attributed? Does vocational training result in superior work habits for the Experimental Group?

A significant difference between groups is found on only one of the 21 work skills rated by employers. In the employer's opinion, more persons in the Experimental Group were trained for their present job. This is a logical finding for the trained group! Of note is the fact that this is the only item from the employer's interview that revealed significant differences between the two groups. Do these findings suggest that habilitation training is lacking in benefits? Again the answer appears to be no. Criterion Factor 1 has major loadings from 19 of the 21 work skills to become just what it is titled, an employer's rating on the "Effectiveness of the Employee." A review of these traits (listed as criterion variables 37 through 57 in the Appendix) indicates these are the types of job attributes which a habilitation program seeks to establish. A quantitative difference does exist on 19 of these work habits although it does not reach statistical significance.

Statistically significant difference does exist between the trained group and the untrained group on Factor 7, "Task Orientation." An employer-rated trait, maintains high performance level, contributes to the loading of the factor, a factor on which the trained group has significantly superior performance.

Comparison of the vocational success achieved by the trained and the untrained group focuses attention on yet another aspect of job success. The untrained Control Group had a higher hourly wage and a higher annual income, yet the trained Experimental Group had longer job tenure and worked more hours per week. These findings seem to say, in effect, that the trained group continued significantly longer in jobs in which they worked a greater number of hours for less pay. Why is this? One very practical reason may be the suggested willingness of an employer to retain an employee who did not rate significantly higher in work habits, if the employee was willing to continue to work for a lower salary.

Another reason may be the skill of the counselor, first in locating a job for the trainee, then in creating a realization in the employer of the positive attributes possessed by the employee, as well as creating in the employee an awareness of the value of being employed even though remuneration may not be at the level desired. A significantly greater number of the trained group utilized the services of a counselor in obtaining employment, and a significantly higher number of these subjects were employed at the time of the interview. Could it be that it is the counselor's skill in job placement that is reflected in the subject's belief that his job held opportunity for advancement, and in his expected continuance on his present job for a significantly greater length of time? Did this supportive influence also make it possible for a significantly larger number of the group who were trained to report that their financial state had improved in the two years prior to the interview?

Parents of those who received habilitation training were significantly more satisfied with the son's job. Perhaps this fact, too, reflected counselor skill, not only skill in job placement but skill, as well, in counseling parents of the mentally retarded.

Although the training programs do appear to establish superior, but not significantly superior work habits in a less endowed, more handicapped Experimental Group, what they also appear to do is to create in these trained individuals a desire to work, a high performance level, a willingness to work longer hours for less pay, to be more punctual, to be more regular in job attendance, and to have a more acceptable reason for job termination.

In numerous success areas the Control Group and the Experimental Group performed equally well, and in some few the Control Group had superior performance. However, on variables which are representative of the more basic aspects of success, the Experimental Group appears to have met with significantly greater success than has the Control Group. For these reasons Hypothesis Three is considered confirmed. Mentally retarded youths who pursue a program of special work training obtain a higher degree of success than those who enter employment without a program of special work training (comparison between Experimental and Control Groups).

Differences among the Four Experimental Groups

Predictor Variables

Analyses of variance of the personality attributes of the 100 subjects in the four training groups, as indicated by the predictor scores, yields a comparison of trainees on the basis of the location where they had training. Analyses of variance of predictor variables which result in significant F-ratios are set forth in Table 22. Significant differences among the four groups on dichotomous predictor variables are listed in Table 28. On variables related to personality, Marbridge Ranch leads among the groups with significantly higher means on fourteen. South Texas Habilitation Center has higher means on eight variables; those who were trained in the public schools have higher means on six variables. State School is higher on five.

Predictor traits on which Marbridge Trainees excel are: recognition of limitations, responsibility, kindness, grooming, positive attitudes regarding father, cooperative, handles failure well, and self-directing (as observed during interviews by the research team). A significantly greater number of this group also have a more acceptable reason for leaving home, possess greater contentment (General Satisfaction subscore), have a greater frequency of creative responses (on Alternate Uses), apply reasoning to practical situations (Listening Test of Vocational Aptitude), are from homes with higher social status (Index of Status Characteristics), and are older (chronological age) at the time of the interview. The ranch-trained group ranks higher on these traits despite the presence of more serious handicaps.

Traits on which the South Texas Habilitation Center Subjects, 68% of whom were Latin Americans, exceed the other groups are: optimum performance and cheerfulness (as reported by the parents) and general happiness and degree of contentment (General Satisfaction subscores). These persons were found to be from homes which were significantly more stable, and the subjects were older when they first established residence away from the parent's homes. However, the group required medication more frequently than other groups. Although a significantly greater number of these persons were rated as having attained a rational-altruistic level of character development, the finding is interpreted with caution because this highest level of character development is not a common dimension for the mentally retarded subjects included in the research. Only six of the 100 Experimental Subjects were found to have attained top level character development. Even then ratings on rational-altruistic did not represent a total functioning at this level, but rather a combination of the two higher levels, rational-altruistic and irrational-conscientious. By actual count, a greater number of the subjects from the South Texas Habilitation Center were classified as having achieved the third level, conforming, in their character development.

Traits in which the randomly selected public high school special education group appear to lead are fluency, flexibility, and originality in creative thinking (Alternate Uses subscores) and in reaction time (as measured by Discrimination Reaction Time). The average physical size (weight) was significantly greater for this group. The public school special education group had a significantly larger number of subjects whose retardation was classified as exogenous. The training program for these persons was less concentrated in time than were those of the three habilitation centers; therefore, the group led in the amount of school training experience.

The traits on which the State School Group ranks above the other three groups are enjoyment of school, the number of years spent in job training, and need achievement or motivation (as measured by Peck's Sentence Completion). The two lower levels of character development, amoral and expedient, were found with significantly greater frequency in this group than in other Experimental Groups. Any interpretation of the performance of the group on predictor variables must take into consideration that 84% of the State School Group were from broken homes, versus 61% of the total Experimental Group. The Group also had a greater number of subjects whose retardation was classified as endogenous.

Although differences existed in the admission requirements of the four training settings, significant differences do not exist among the groups on scores for the Castaneda Manifest Anxiety Scale or on the Lie Scale portion of the instrument; therefore, findings from the present study do not substantiate those of Malpass et al. (1960) in which institutionalized retardates were found to be more anxious than were retardates in special education public school classes. Very few differences were noted among groups on other measures of personality. No significant differences are found on scores from Bown's Self-Report Inventory, Draw-A-Man, Mental Health, observed mental health (Interpersonal Impressions Rating Scale), or on parent's report of emotional stability. Significant differences are found on only one of the five subscores for Peck's Sentence Completion. No significant differences are found on measures of social maturity, nor do differences exist in IQ and other measures of convergent thinking or in measures of psychomotor skill or reaction time. However, the public school group does excel in three aspects of divergent thinking, fluency, flexibility, and originality (as measured by Alternate Uses). On the fourth aspect of divergent thinking, originality, the Marbridge Ranch Group scores significantly higher, and their average score is also significantly greater on a measure of practical reasoning. On two subscores of General Satisfaction, another institution-trained group, South Texas Habilitation Center, has significantly higher scores.

The above findings do not show superior performance on personality measures for retardates who received habilitation training in special education public school classes except in the area of divergent thinking. In this instance, speculation arises as to whether the ability to think divergently reflects the influences of special education public school classes or the benefits of continued home and parental influences. On most predictor variables where significant differences exist, the public school group has lower means.

Instruments intended for future use as screening instruments were administered to members of the four experimental groups after training rather than in the period immediately preceeding entrance to training. The training period probably has little effect on the more enduring aspects of personality, but on traits susceptible to change the possible influence of habilitation training is recognized.

Criterion Variables

Review of the analysis of variance on criterion variables for the four Experimental Groups as set forth in Table 23 reveals differences on 19 variables, 12 significant at the .01 level of confidence and seven at the .05 level. At the .01 level, South Texas Habilitation Center reflects the highest means on four variables: independence of residence, follows orders willingly, hours helping at home, and little or no aid from social agencies. South Texas Habilitation Center has the highest means, significant at the .05

level, on three variables: pursuit of desirable leisure activity, respect for authority, and initiates activity.

State School obtains the highest means on five variables; three are at the .01 level of confidence: did not receive finances from parents, parents regarded as mature, and hourly earnings. Two variables are significant at the .05 level: purchases own clothing and realistic goals.

Marbridge Ranch has the highest means, significant at the .01 level of confidence, on law conformity and hours spent viewing television. At the .05 level, graduates of Marbridge Ranch excel in amount of savings and hours spent in meetings. The public school habilitation classes have the highest means, significant at the .01 level of confidence, on possessed driver's license, time spent in outdoor recreation, and time spent with parents.

A review of significant sources of variation of dichotomous criterion variables as set forth in Table 29 shows that State School subjects more frequently spent leisure time with peers, were with friends most of their leisure time, participated in activities separate from their families, and carried some type of insurance more frequently. The fact that a large percentage of State School subjects were from broken homes makes lack of family association an expected finding.

Marbridge Ranch subjects share highest ranking with State School on a variable termed, with friends most of the time. The Marbridge subjects also have highest ranking on job placement through counselor and have vacations from their jobs, but they were more frequently the only employee. These subjects were found to be more substantially employed than were those of other groups, i.e., were employed at least eleven of the twelve months immediately preceding the study.

The public school special education group has a higher number who reported not their greatest, but their next greatest happiness, came from spare time. These persons seldom shared leisure activities with their families.

The subjects from South Texas Habilitation Center report more frequently that they spent more spare time alone, that their friends were peers, and they obtained job placement through family. Their leisure activities were usually with the family.

Again, as in comparison of differences between the Experimental and the Control Group, no significant differences are found on the employer's ratings of subject's work habits, but in important determinants of success, i.e., factual information on law conformity and hourly earnings, differences do exist among the four experimental groups. Results set forth in Tables 23 and 29 show that South Texas

Habilitation Center represents the highest mean most frequently, and the State School the lowest mean most frequently on criterion variables on which there are significant differences. Differences on measures of success among the Experimental Groups are not as great as are differences between the entire Experimental Group and the Control Group. However, the findings lend confirmation to Hypothesis Four: Differences in personal, socio-civic, and vocational success as determined by the derived criteria measures occur among the four experimental groups of subjects.

Supplementary Analyses of Data

Five Group Analyses of Variance for Predictor Factors

Analysis of variance techniques were utilized to determine significant differences among the five groups (Control Group and four Experimental Groups) on predictor factors; results are shown in Table 30. In some instances one of the Experimental Groups actually has the lowest mean performance on a factor on which the Control Group has a performance which is significantly lower than the mean performance for the combined Experimental Group. An example of this is seen in Factor 9, "Age Graded Independence." Comparison of the Control Group, those who had no training, with the Experimental Group, a combination of all groups who had training, indicates the Control Group has a significantly lower mean on this factor. Yet, when the Control Group is compared separately with each of the four sets of subjects comprising the Experimental Group, it is found that the mean for the Public School Group is less than the mean for the Control Group. However, on Factor 5, "Divergent Thinking," the mean for the Control Group is significantly higher than the mean for the total Experimental Group and also higher than the mean for any of the four training groups. On Factor 11, which indicates lack of habilitation training, the Control Group has significantly less training than does the total Experimental Group and also less training than any of the four training groups.

In the five group analyses of variance, significant differences among the five groups are found on eleven predictor factors. These analyses also allow comparison of the Control Group with each of the four Experimental Groups. These comparisons show the Control Group had the lowest mean on Predictor Factor 1, "Controlled Awareness." However, on Factor 3, "Interpersonal Competence," and on Factor 15, "Orderliness of Concept Formation," the State School Group has means lower than those of the Control Group. On a negative factor, Factor 4, "Unstable Temperament," and on a positive factor, Factor 20, "Reaction to Physical Stimuli," the Public School Group has means higher than those shown for the Control Group.

On Factor 6, "Body Image," both the Public School Group and the group from Marbridge Foundation have means higher than that of the Control Group. On Factor 17, "Physical Stamina," one group, Marbridge Foundation, had a mean lower than that of the Control Group.

The above findings show that in one instance the position of the performance of the Control Group, i.e., whether it is significantly high or low, when compared with the Experimental Group is not maintained when the Control Group is compared separately with each of the four Experimental Groups. Factor 9, "Age Graded Independence," is an example. On the other four factors the position of the Control Group is maintained, i.e., if subjects in the Control Group perform significantly higher than the Experimental Group on a factor, they also perform higher than any of the four Training Groups on this factor.

Five Group Analyses of Variance for Criterion Factors

Significant differences obtained from analyses of variance for the five groups, Control Group and each of the four Experimental Groups, on criterion factors are shown in Table 31. Four of the nine factors on which significant differences exist among the five groups are the same factors on which significant differences exist between the Control

Group and the Experimental Group. In both analyses the Control Group has the highest mean on Factor 3, "Functional Autonomy," Factor 9, "Family Irresponsibility," and Factor 12, "Borderline Functioning," and the lowest mean on Factor 17, "Laborer Syndrome."

The Control Group has the lowest mean on two factors on which the five groups differ significantly, but on which there are not significant differences between the Experimental Group and the Control Group. These two factors are Factor 8, "Dependence upon Religious Institutions," and Factor 31, "Acquiescent as to Placement." On two other factors, Factor 4, "Parental Ambivalence," and Factor 6, "Dependence upon Authority," the subjects from South Texas Habilitation Center have a mean lower than that of the Control Group. On Criterion Factor 2, "Responsible Work Orientation," the State School Subjects have the highest mean, those from Marbridge Foundation the second highest mean, and the Control Group the third highest mean.

Differences found between the Control and the Experimental Group on four criterion factors are maintained when the Control Group is compared separately with each of the four training groups. These findings serve to strengthen the statement that significant differences exist between the trained and the untrained groups in these four areas of success.

CONCLUSIONS AND IMPLICATIONS

Conclusions

Research on the efficacy of habilitation training was undertaken because past study of the benefits of special training classes for the educable mentally retarded have not resulted in conclusive findings. The present study on the after-training success of young adult male retardates confirms each of the four hypotheses proposed in the investigation.

1. Factor analytic procedures reduced the 80 point scale and continuous criterion--success--variables to 17 success factors. The emergence of 17 rather than one basic factor offers proof that success is multidimensional. Variables used as measures of personal success combined with variables used as measures of socio-civic and of vocational success to define factors, and in doing so demonstrated that these three success areas are highly interrelated. From the 17 basic factors syndromes emerged which appear to be characteristic of the retardates included in the study. These are:

a. Desirable job habits as rated by the employer were found to be highly interrelated. Factor 1 had major loadings from 19 of the 21 work skills, to become just what it is titled, an employer's rating on the "Effectiveness of the Employee."

b. The structure of Factor 2, "Responsible Work Orientation," demonstrates the interrelation of the three aspects of success--personal, socio-civic, and vocational. Affluence and job tenure relate to realistic viewing of capabilities, job optimism, and ability to function independently of parents.

c. In Factor 7, "Task Orientation (Withdrawal Syndrome)," relationships among the three aspects of success are not positive. The retarded subjects who have successful work habits are not leaders, have few friends, and derive pleasure from marginal activities. The syndrome is one frequently seen in retardates whose job represents their sole contact outside of family environs.

d. In two other instances, Factor 10, "Escape from Responsibility," and Factor 11, "Work versus Gregarious Satisfaction," desirable leisure activities combine negatively with vocational success. Both music enjoyment and frequent movie attendance appear to represent either escape from job unhappiness or motivation which is hedonistic rather than occupational.

e. "Self-Directed Responsibility" is indicated in Factor 15. Successful handling of credit and leisure combines with job habits of neatness and carefulness. However, in the area of socio-civic success there is failure to exercise the right to vote and to enjoy fellow employees.

f. Another combination of positive and negative loadings is found in Factor 17, "Laborer Syndrome," a syndrome frequently observed in seasonal agricultural laborers. Job happiness is reported and the actual number of hours worked per week is high, but there is lack of leadership ability, permanency of residence, and savings. Annual earnings are low, and average job tenure is short.

g. The structure of Factor 12 suggests "Borderline Functioning." The syndrome is characterized by poor health and stamina, inability to handle company money or to advance usable suggestions, yet leisure activities are acceptable.

h. Negative ratings combine to define Factor 9, "Family Irresponsibility." Persons employed fewer hours per week appear to engage in less desirable spare time activities, have lower ratings on law conformity, have more dependents. but require more aid from social agencies.

i. Attributes which combine positively in success syndromes do not necessarily combine negatively in failure syndromes. Only three of the nine variables which combine negatively to define Factor 16, "Failure Syndrome," combine positively in Factor 1, "Effectiveness of Employee." The structure in the failure syndrome suggests a loosely integrated personality who has not identified closely with parents.

Opinions of the ten experts who contributed judgments concerning the constituents of success are substantiated. The success of an individual is best defined by a profile of success attributes or factors. Hypothesis One is accepted: The numerous variables which are proposed by writers as criteria for personal, socio-civic, and vocational success are represented by a smaller number of common factors, so that scores for "factors-in-persons" are derived (criterion measures).

2. Interest in predictor variables centered on the basic combinations derived when the 78 variables were

subjected to factor analytic procedures. Multiple regression techniques determined the validity of these variables as predictors of success.

a. Factoring of predictor variables served to determine what clustering of personality and cognitive attributes exist in young adult male retardates. Interest centers on the following findings:

   (1) A relationship between Vineland Social Maturity Scale, IQ, and social class does not exist in this study of retardates. The factor "Social Maturity" indicates it is not the convergent thinking measures by the IQ, but the ability to apply reasoning to practical situations that relates more closely to social maturity. The structure of the factor "Interpersonal Competence" implies higher social class is related to family stability, permanency of address, and a positive attitude toward family.

   (2) Viewing of convergent and divergent thinking as two facets of intellect appears appropriate in the retarded as

well as in the normal. One predictor factor is determined by major loadings from IQ, listening ability, and verbal facility. Two other cognitive factors are defined by measures of divergent or creative thinking. Definition of two factors from Alternate Uses subscores indicates more than one aspect of creativity is present in the functioning of the retarded.

(3) The value of biographical information is emphasized in the factor "Optimum Performance." Here, physical well-being is related to motivation in the retarded.

(4) Factors defined by scores from personality instruments, both self-report and projective techniques, indicate that the combinations of attributes present in the healthy personality are not the same combinations present in the unhealthy personality. In the factor, "Openness to Stimuli," mental health and lack of anxiety relate to physical health, to happiness and enjoyment of life, and to success in interpersonal relations.

(5) Confirmation of the circular influence of parent-son attitudes is found in the factor "Unhappy Temperament." The parent's reporting of an unstable son combines with observed lack of kindness on the part of the subject and with the subject's report of unhappiness with life.

(6) Ratings on the level of character development attained by each subject are included in the study. These ratings are based on the five levels defined by R. F. Peck and Havighurst (1960):

  (a) amoral--a person with a child-like ability to govern his actions which are frequently paradoxical and nulifidian

  (b) expedient--a person possessed of few moral inner directives who does not perceive the long-range results of his behavior

  (c) conforming--a person lacking in self-direction, one who placidly consents to the dictates of his associates

(d) irrational-conscientious--a person who maintains an unswerving life style, one who governs his own behavior with strongly organized "don'ts"

(e) rational-altruistic--a person who maintains rational control of his actions, one who seeks the well-being of others as well as of self

The five character levels listed above are an elaboration of Piaget's theory (1960a) of a three phase development of moral judgment. Differences occurred when R. F. Peck and Havighurst (1960) subdivided Piaget's first stage of character development, individual caprice, into two types, amoral and expedient, and when they inserted an additional stage, irrational conscientious, between Piaget's second level, social constraint, and his third level, equilibrium of agreement and cooperation.

In the present study, ratings on amoral, the lowest level of character development, combine with lack of skill in interpersonal relations, lack of motivation, and with a poorly integrated personality to define the factor termed "Absence of Superego." The structure of two factors, "Controlled Awareness" and "Interpersonal Competence," indicates that in the retardates included in the study a well-integrated personality relates positively to the third level of character development, conforming, and relates negatively to the first and second levels, amoral and expedient.

Of extreme interest is the loading from expedient, a level of character development, on the factor "Divergent Thinking." The limited creativity in the retardate, like the creativity in the intellectual, appears to be found in persons capable of accepting their own impulses (R. F. Peck, 1958; Stein, 1963). These are persons who, on occasions, permit bits of unbridled id to break through the buffer zones of the ego and the barriers of the superego.

Retardates included in the study are most frequently characterized by a conforming level of character development. Structure of the factor "Controlled Awareness" suggests that the conforming retardate is also a self-accepting, motivated person. Perhaps conformity in the retardate is not an indication of passivity, but is superego motivation, and represents a striving to meet social standards and parental injunctions.

The combinations of levels of character development derived from the present factor analytic study suggest that R. F. Peck and Havighurst's (1960) two higher levels, irrational conscientious and rational altruistic, combine into one broader level in retardates to indicate social maturity. A theory which provides the educable mentally retarded with four levels of character development, one less than R. F. Peck and

Havighurst's and one more than Piaget's (1960a), might be explored.

b. The value of predictor factor scores and scores on dichotomous predictor variables as indicators of success was assessed by determining their relative weights for, and strength of association with, criterion factor scores and scores on dichotomous criterion variables. Seventy of the 80 point scale and continuous criterion variables have major loadings on criterion factors which were predicted significantly. Significant prediction was achieved for 35 of the 61 dichotomous criterion variables.

(1) The predictor factor, "Controlled Awareness," comprised of major loadings from items of the Interpersonal Impressions Rating Scale, Peck's Sentence Completion, and Vineland Social Maturity Scale, contributed standard weights of .10 or above in the significant prediction of eight success factors and 14 dichotomous criterion variables. Comparable prediction was achieved by another predictor factor, "Interpersonal Competence," with major loadings from

Interpersonal Impressions Rating Scale, Peck's Sentence Completion (Family Dynamics subscore), Dotting, Index of Status Characteristics, ratings on internal stability of home, and past places lived. The prediction in the last instance confirms Sarason's (1953) belief in the influence of the parents' life style on the functioning of the retarded son.

(2) Influence of social class and parents' activities is again noted as the two variables combine with physical attributes in two predictor factors, "Body Image" and "Physical Stamina," to contribute to the significant prediction of seven success factors and nine dichotomous criterion variables.

(3) High prediction of success variables is achieved by two factors, "Social Maturity" and "Controlled Awareness." Major loadings from subscores of the Vineland Social Maturity Scale on the two factors demonstrate the instrument to be one of the most efficient predictor instruments utilized in the study.

(4) In the past, IQ has been considered a poor predictor of vocational potential. However, in the present study it has a major loading on the factor, "Convergent Thinking," which, with standard weights of .10 or above, predicts five success factors, factors which represent all three aspects of success.

(5) Although the factor "Divergent Thinking" contributes to the prediction of six criterion factors, only two, both negative aspects of success, also have a predictive contribution from the factor "Convergent Thinking." The findings demonstrate the distinction between the two aspects of intelligence as predictors of success.

(6) The structure of four predictor factors was defined by loadings from instruments included in the battery for purposes of personality assessment: Peck's Sentence Completion, Bown's Self-Report Inventory, CMAS, General Satisfaction, and Draw-A-Man, Mental Health. These factors related significantly to ten success factors

and 16 dichotomous variables. When self-report and projective instruments are compared, the projective techniques, particularly Peck's Sentence Completion, appear to be more valid predictors. Indication is that feelings and attitudes are more accurately reported when the retardate is not making a self-conscious effort at self-description.

(7) The factor "Reaction to Stimuli" is comprised of one major loading, Discrimination Reaction Time. Yet, the factor contributes to the significant prediction of five success factors and nine dichotomous criterion variables. The ability to react appropriately and immediately to a presented stimulus is found to be related to success in tasks which require psychophysical functioning. The successful psychophysical functioning appears in turn to promote a sense of adequacy which is reflected in the relation of the predictor factor, "Reaction to Stimuli," to such

success traits as self-assurance and leadership ability.

(8) One or more of the four predictor factors defined by loadings from such vital statistic variables as physical size, handicaps, number of serious illnesses and accidents, need for medication, and social class, contribute to the significant prediction of 12 success factors and 15 dichotomous criterion variables. Belief in the predictive value of data obtained from biographical information is substantiated.

(9) Because 32 subjects did not have either parent abailable to respond to _Worchel's Rating Scale of Child Concept_ or to be rated on _Fels Parent Behavior Rating Scale, Acceptance or Rejection_, these two instruments were not included in the factor analysis of predictor variables. However, multiple regression of _Worchel's_ and _Fels_' T-scores upon T-scores for the 80 criterion variables resulted in 25 significant F-ratios. Significant relationships also exist

between the two instruments and seven dichotomous criterion variables. The demonstrated predictive validity confirms Macmillan's statement that success is an end result of a process which begins with, and is determined by, parental attitudes (Macmillan, 1962, p. 418).

From the above data, predictor factor variables and dichotomous predictor variables appear to be reasonably valid measures which have explained or predicted a large proportion of the many aspects of success included in the present study. Hopefully, the instruments included in the study can become the core of a battery of tests to be used in screening candidates for habilitation training. Hypothesis Two is accepted: Scores on the measures used as predictor variables are reduced to a set of "factor variables" which have significant positive relationship to the personal, socio-civic, and vocational success of the mentally retarded individuals studied.

3. Through analysis of variance techniques, reliable findings were obtained which indicate that significant differences exist between the trained Experimental Group and the untrained Control Group.
    a. Significant differences exist on 21 of the 78 point scale and continuous predictor variables.

Differences on dichotomous variables were obtained by chi-square techniques.

(1) The trained Experimental Group was found to be happier, more persistent, reliable, responsible, and self-directing. Yet, a significantly greater number of this group came from broken homes, and a significantly greater number had retardation which was classified as exogenous in nature. Although not statistically significant, 17% of the trained Experimental Group possessed severe physical handicaps versus 8% of the untrained Control Group.

(2) The untrained Control Group excelled in adaptabilility, ability in written communication, IQ, psychomotor speed, and divergent thinking. The untrained group also had significantly higher means on range of attention, ability to apply reasoning to practical situations, mental health (as measured by a projective technique), and social maturity.

(3) The above differences exist despite the care exercised in obtaining random samples, and in drawing the control sample from the rolls of schools which had no special education

habilitation classes in existence at the time the subjects were in school. These findings lend credence to the belief that it is the more handicapped person, both physically and intellectually, as well as the one who has experienced less home stability, who is placed for training in public school special education classes or in institutional settings.

b. Analysis of variance techniques reveal significant differences which exist between the trained Experimental Group and the untrained Control Group on criterion--success--factors. Chi-square techniques were used to determine significant differences on dichotomous variables.

(1) The untrained group was found to exhibit greater initiative and independence in some areas of socio-civic development. However, results do not indicate a superior handling of the acquired independence. Although a greater independence of residence and a greater number of dependents was noted, more aid from social agencies was also noted. More of the untrained group obtained driver's licenses, but more had law violations.

More used credit, but more had poor credit ratings and more were in debt. Although more of the untrained Control Group spent time with their parents, it is remembered, parenthetically, that fewer of the group came from broken homes.

(2) The trained Experimental Group achieved greater success in some vocational areas. A significantly larger number of the group were employed at the time of the interview. Although a significant difference exists between the groups on only one of the 21 work skills rated by employers, some differences do exist on others, and these differences show the trained group to have the higher mean in most instances.

What the training programs appear to do is to establish superior, but not significantly superior, work habits in a less endowed, more handicapped Experimental Group. What the training programs also appear to do is to create in these trained individuals a desire to work, a high performance level, a willingness to work longer hours for less pay, to be more punctual, to be more regular in job attendance, and to have a more acceptable reason for job termination. For these reasons, Hypothesis Three is considered confirmed. Mentally retarded youths who pursue a program of special work training obtain a higher degree of success than those who enter employment without a program of special work training (comparison between Experimental and Control Groups).

4. Consideration was given significant differences found to exist among the four experimental groups.

    a. Analyses of variance of the personality attributes of the 100 subjects in the four training groups yielded a comparison of trainees on the basis of the location where they were trained. Instruments intended for future use as screening instruments were administered to members of the four experimental groups after training, rather than in a period prior to training. The training probably had little effect on the more enduring aspects of personality, but on traits susceptible to change the possible influence of habilitation training is recognized.

        (1) On variables related to personality, Marbridge Ranch led among the groups with significantly higher means on fourteen traits. The ranch-trained group ranked higher on traits such as recognition of limitations, grooming, and responsibility, despite the presence of more serious physical handicaps.

(2) South Texas Habilitation Center subjects, 68% of whom were Latin, had higher means on eight variables. These variables included stability of home and contentment.

(3) Those who were trained in public schools had higher means on six variables, two of which were physical size and retardation classified as exogenous. The group excelled in three aspects of divergent thinking.

(4) State School had higher means on five attributes, one of which was need achievement or motivation. Eighty-four per cent of the State School Group were from broken homes, versus 61% of the total Experimental Group.

(5) Significant differences did not exist among the groups on scores for the Castaneda Manifest Anxiety Scale. Retardates who had been institutionalized were not found to be more anxious than retardates in public school special education classes (Malpass et al., 1960). No significant differences existed among groups on measures of social maturity, IQ and other measures of convergent thinking, on measures of psychomotor skill or reaction time, or on personality inventories.

b. Significant differences existed among the four trained Experimental Groups on 19 of the 80 point scale and continuous criterion--success--variables.

(1) South Texas Habilitation Center reflected the highest mean on seven of the variables, State School on five, Marbridge Ranch on four, and Public Schools on two.

(2) On the 14 dichotomous success variables on which significant differences existed, Marbridge Ranch had the highest percentage on five of the variables, State School and South Texas Habilitation Center each had the highest percentage on four, and the Public School Group had the highest percentage on two.

(3) Again, as in comparison of differences between the Experimental and Control Groups, no significant differences were found on ratings on work habits of the subjects made by the employer, but in important determinants of success, i.e., factual information on law conformity and hourly earnings, differences do exist among the four Experimental Groups. Results show that South

Texas Habilitation Center represents the highest mean most frequently and the State School the lowest mean most frequently on criterion variables where there are significant differences. Differences on measures of success among the four Experimental Groups are not as great as are differences between the entire Experimental Group and the Control Group. However, the findings lend confirmation to Hypothesis Four: Differences in personal, socio-civic, and vocational success, as determined by the derived criteria measures, do occur among the four Experimental Groups of subjects.

Implications

Recommendations which evolve from the present study include suggested use for the findings as well as suggestions for further research. These recommendations are:

1. With some modification, the battery of predictor instruments used in this study would be valid measures for screening young adult male applicants in a habilitation training program for the educable mentally retarded.

2. Findings from the research should be of value in ascertaining the objectives of training programs to promote utilization of talents, however limited, of educable mentally retarded individuals.
3. Although the present study determines differences in success which existed between young adult male retardates who had received habilitation training and those who had received no training, additional research is indicated which would assess differences between the success of young adult male retardates and the success of young adult male normals.
4. While the reported research does serve to indicate the personality complex which exists in young adult male retardates, more conclusive evidence would be obtained from a study using the same methods but comprised of a larger sample of subjects.
5. Because differences are known to exist in the achievement and in the successful functioning of normal and gifted males and females, the need for an inquiry which uses the framework of the present study, but which is comprised of female educable mental retardates, is indicated.
6. It is recommended that the reported inquiry comprise the initial phase of a longitudinal study on the success of young adult male retardates. Provision would be made to interview the subjects at

five year intervals to determine if the years of increased physical maturity are accompanied by either an increase in successful functioning or by a deterioration, or, perhaps, by a maintenance of the level of functioning now possessed.

7. A need is indicated to explore further the relationship between levels of character development and success in young adult retardates. Such a study would determine if findings which provide the educable mentally retarded with four levels of character development are substantiated. Also it may be possible to determine if failures and/or inconsistencies in the reasoning processes are related to lower levels of character development in retardates. After knowledge is acquired in the above areas it would then be appropriate to give consideration to remedial efforts designed to promote character development in retardates, and to determine if these efforts will result in a more successful functioning of the retardates.

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REFERENCES

Adorno, J. W., Frenkel-Brunswick, Else, Levinson, D. J. & Sanford, R. N. *The authoritarian personality*. New York: Harper, 1950.

Ainsworth, S. H. *An exploratory study of educational, social and emotional factors in the education of mentally retarded children in Georgia public schools*. Athens: University of Georgia, 1959.

Baldwin, A. L., Kalhorn, Joan, & Breese, Fay H. The appraisal of parent behavior. *Psychol. Monogr.*, 1949, 299.

Baldwin, W. K. The social position of the educable mentally retarded child in the regular grades in the public schools. *Except. Child.*, 1958, *25*, 106-108, 112.

Baller, W. R. A study of the present social status of a group of adults, who, when they were in elementary schools, were classified as mentally deficient. *Genet. Psychol. Monogr.*, 1936, *3*, 18.

Bennet, Annette. *A comparative study of sub-normal children in the elementary grades*. New York: Bureau of Publications, Teachers College, Columbia University, 1932.

Bobroff, A. The stages of maturation in socialized thinking and in the ego development of two groups of children. *Child Develpm.*, 1960, *31*, 321-338.

Brainerd, B. R. Increasing job potential for the mentally retarded. *J. Rehabilit.*, 1954, *20*, 4-6.

Brophy, A. L. Self, role, and satisfaction. *Genet. Psychol. Monogr.*, 1959, *59*, 263-308.

Campbell, D. T. Operational delineation of "what is learned" via the transposition experiment. *Psychol. Rev.*, 1954, *61*, 167-173.

Cassidy, Viola, & Phelps, H. R. *Postschool adjustment of slow learning children.* Columbus: Ohio State University, Bureau of Special Education, 1955.

Cassidy, Viola M., & Stanton, J. E. *An investigation of factors involved in the educational placement of mentally retarded children.* Columbus: Ohio State University, 1959.

Castaneda, A., McCandless, B. R., & Palermo, D. S. The children's form of the Manifest Anxiety Scale. *Child Develpm.*, 1956, *27*, 317-326.

Cattell, R. B. *Personality: a systematic theoretical and factual study.* New York: McGraw-Hill, 1950.

Cattell, R. B. Factor analysis. New York: Harper, 1952.

Cattell, R. B. *Personality and motivation structure and measurement.* New York: World, 1957.

Charles, D. C. Ability and accomplishments of persons earlier judged mentally deficient. *Genet. Psychol. Monogr.*, 1953, *47*, 3-71.

Cochran, Irene, & Cleland, C. C. Manifest anxiety of retardates and normals matched as to academic achievement. *Amer. J. ment. Defic.*, 1963, *67*, 539-542.

Cohen, J. S. An analysis of vocational failures of mental retardates placed in the community after a period of institutionalization. *Amer. J. ment. Defic.*, 1960, *65*, 371-375.

Collmann, R. D., & Newlyn, D. Employment success of educationally sub-normal ex-pupils in England. *Amer. J. ment. Defic.*, 1956, *60*, 733-743.

Cowan, L., & Goldman, M. The selection of the mentally deficient for vocational training and the effect of this training on vocational success. *J. consult. Psychol.*, 1959, *23*, 78-84.

Doll, E. A. *The measurement of social competence.* Minneapolis: Educational Publishers, 1953.

Doll, E. A. Occupational education for the mentally deficient in a school program. Amer. J. ment. Defic., 1958, 63, 51-53.

Dubrow, M. Sheltered workshops for the mentally retarded as an educational and vocational experience. Personnel guid. J., 1960, 38, 392-395.

Eysenck, H. J. The scientific study of personality. London: Routledge & Kegan Paul, 1952.

Fleishman, E. A. Dimensional analysis of psychomotor abilities. J. exp. Psychol., 1954, 48, 437-454.

Fruchter, B. Introduction to factor analysis. New York: Van Nostrand, 1954.

Fruchter, B., & Jennings, E. Factor analysis. In H. Borko (Ed.), Computer applications in the behavioral sciences. Englewood Cliffs, New Jersey: Prentice-Hall, 1962. Pp. 238-265.

Gallager, J. J. Measurement of personality development in preadolescent mentally retarded children. Amer. J. ment. Defic., 1959, 64, 296-301.

Goldstein, H. Methodological problems in research in the educational programs for the treatment and habilitation of the mentally retarded. Amer. J. ment. Defic., 1959, 64, 341-345.

Graybill, F. A. An introduction to linear statistical models. Vol. 1. New York: McGraw-Hill, 1961.

Guilford, J. P. Fundamental statistics in psychology and education. New York: McGraw-Hill, 1956a.

Guilford, J. P. The structure of intellect. Psychol. Bull., 1956b, 53, 267-293.

Guilford, J. P. Three faces of intellect. Amer. Psychologist, 1959, 14, 469-479.

Gulliksen, H. Theory of mental tests. New York: Wiley, 1950.

Guthrie, G. M., Butler, A., & Garlow, L. Personality differences between institutionalized and non-institutionalized retardates. Amer. J. ment. Defic., 1963, 67, 543-548.

Haggard, E. A. Social-status and intelligence: an experimental study of certain cultural determinants of measured intelligence. Genet. Psychol. Monogr., 1954, 49, 141-186.

Hall, C. S., & Lindzey, G. Theories of personality. New York: Wiley, 1957.

Heber, R. A manual on terminology and classification in mental retardation. Amer. J. ment. Defic., Monogr. Suppl., 1959, No. 2.

Hobbs, N. Research in mental retardation: prospects and strategies. Amer. J. ment. Defic., 1959, 64, 229-239.

Iscoe, I., & Cochran, Irene. Some correlates of manifest anxiety in children. J. consult. Psychol., 1960, 24 (1), 97.

Johnson, G. O. A study of the social position of mentally handicapped children in the regular grades. Amer. J. ment. Defic., 1950, 55, 60-89.

Johnson, G. O. A comparative study of the personal and social adjustment of mentally handicapped children placed in special classes with mentally handicapped children who remain in regular classes. Syracuse, New York: Syracuse University, 1961.

Johnson, G. O. Special education for the mentally handicapped--a paradox. Except. Child., 1962, 29, 62-69.

Jolles, I. The diagnostic implications of Rorschach's test in case studies of mental defectives. Genet. Psychol. Monogr., 1947, 36, 89-197.

Jones, L. V. Problems of devising and selecting appropriate measurement tools. Amer. J. ment. Defic., 1959, 64, 384-393.

Kaiser, H. F. Computer program for varimax rotation in factor analysis. Educ. psychol. Measmt, 1959, 19, 413-420.

Kennedy, Ruby. The social adjustment of morons in a Connecticut city. Hartford, Connecticut: Social Service Dept., 1948.

Kern, W. H., & Pfaeffle, H. A comparison of social adjustment of mentally retarded children in various educational settings. Amer. J. ment. Defic., 1962, 67, 407-413.

Kolstoe, O. P. The employment evaluation and training program. Amer. J. ment. Defic., 1960, 65, 17-31.

Kolstoe, O. P., & Shafter, A. J. Employability prediction for mentally retarded adults: a methodological note. Amer. J. ment. Defic., 1961, 66, 287-289.

Lipman, R. S. Children's manifest anxiety in retardates and approximately equal M. A. normals. Amer. J. ment. Defic., 1959, 64, 1027-1028.

Lorge, I. Planning cooperative utilization of data on the mentally retarded. Amer. J. ment. Defic., 1959, 64, 269-277.

McClain, E. W. The relationship between student teachers' self-reported perceptions and pupil evaluations. Unpublished doctoral dissertation, The University of Texas, 1962.

McGuire, C. Talented behavior in junior high schools. Cooperative Research Project Number 025. Austin: The University of Texas, 1960.

McGuire, C., & White, G. D. The measurement of social status. Research Paper in Human Development Number 3, Laboratory of Human Behavior. Austin: The University of Texas, 1955.

Macmillan, M. B. Adjustment and process: a neglected feature of follow-up studies of retarded people. Amer. J. ment. Defic., 1962, 67, 418-423.

McNemar, Q. Psychological statistics. New York: Wiley, 1955.

McPhee, W. M., & Magleby, F. L. Success and failure in vocational rehabilitation. Personnel guid. J., 1960, 38, 497-499.

Malpass, , L. F., Mark, Sylvia, & Palermo, D. S. Responses of retarded children to the Children's Manifest Anxiety Scale. J. educ. Psychol., 1960, 51, 305-308.

Mann, Sister M. Jacinta. Relationship among certain variables associated with post college success. Educ. psychol. Measmt, 1959, 19, 351-362.

Masland, R. L., Sarason, S. B., & Gladwin, T. Mental subnormality. New York: Basic Books, 1958.

Michael-Smith, H. The mentally retarded patient. Philadelphia: Lippencott, 1956.

Murray, H. A. Explorations in personality. New York: Oxford University Press, 1938.

Murray, H. A. Problems in clinical research. Amer. J. Orthopsychiat., 1947, 17, 203-210.

Peck, J. R. The Marbridge plan: a Texas experiment in habilitation for mentally retarded youth. Except. Child., 1958, 24, 346-350.

Peck, J. R., & Stephens, Will Beth. A study of the relationship between the attitudes and behavior of parents and that of their mentally deficient child. Amer. J. ment. Defic., 1960, 64, 839-844.

Peck, R. F. What makes a man creative? Personnel, 1958, 35, 18-23.

Peck, R. F. Student mental health. Austin, Texas: Hogg Foundation for Mental Health, 1962.

Peck, R. F., & Havighurst, R. J. The psychology of character development. New York: Wiley, 1960.

Pertsch, C. F. A comparative study of the progress of subnormal pupils in the grades and in special classes. Unpublished doctoral dissertation, Teachers College, Columbia University, 1936.

Peterson, L. The mentally retarded as citizens. Unpublished doctoral dissertation, State University of Ohio, 1959.

Peterson, L., & Smith, L. L. A comparison of the post-school adjustment of educable mentally retarded adults with that of adults of normal intelligence. Except. Child., 1960, 26, 404-408.

Phillips, B. N., Hindsman, E., & McGuire, C. Factors associated with anxiety and their relation to the school achievement of adolescents. *Psychol. Rep.*, 1960, *7*, 365-372.

Piaget, J. *The moral judgment of the child.* Glencoe, Illinois: Free Press, 1960a

Piaget, J. *Psychology of intelligence.* Paterson, New Jersey: Littlefield, Adams, 1960b.

Reynolds, M. C. A strategy for research. *Except. Child.*, 1963, *29*, 213-219.

Roy, S. N. *Some aspects of multivariate analysis.* New York: Wiley, 1957.

Sarason, S. B. *Psychological problems in mental deficiency.* New York: Harper, 1953.

Stein, M. J. Creativity in a free society. *Educ. Horizons*, 1963, *61*, 115-130.

Stern, A. Divergent thinking in educable mentally retarded children compared with average and superior children. Unpublished doctoral dissertation, The University of Texas, 1963.

Syden, M. Preparation for work: an aspect of the secondary school's curriculum for mentally retarded youth. *Except. Child.*, 1962, *28*, 325-331.

Thurstone, L. L. Psychological implications of factor analysis. *Amer. Psychologist*, 1948, *3*, 402-408.

Thurstone, Thelma G. *An evaluation of educating mentally handicapped children in special classes and in regular classes.* Chapel Hill: University of North Carolina, 1959.

Tisdall, W. J. Productive thinking in retarded children. *Except. Child.*, 1962, *29*, 36-41.

Toops, H. A. The criterion. *Educ. psychol. Measmt*, 1944, *4*, 271-297.

U. S. Department of Health, Education, and Welfare. Preparation of mentally retarded youth for gainful employment. U. S. Office of Education Bulletin 28. Washington, D.C.: Government Printing Office, 1959.

U. S. Department of Labor. Dictionary of occupational titles: part 1 definitions of titles. Washington, D.C.: Government Printing Office, 1939.

Ward, J. H. Multiple linear regression models. In H. Borko (Ed.), Computer applications in the behavioral sciences. Englewood Cliffs, New Jersey: Prentice Hall, 1962. Pp. 204-237.

Whitcomb, M. A. A comparison of social and intellectual levels of one hundred high grade adult mental defectives. Amer. J. ment. Defic., 1945, 50, 257-262.

Windle, C. D., Stewart, Elizabeth, & Brown, S. J. Reasons for community failure of released patients. Amer. J. ment. Defic., 1961, 66, 213-217.

Worchel, Tillie. Attitudes of parents toward mentally retarded children. Unpublished master's thesis, The University of Texas, 1955.

Worchel, Tillie, & Worchel, P. The parental concept of the mentally retarded child. Amer. J. ment. Defic., 1961, 65, 782-788.

Young, M. A. Academic requirements of jobs held by educable retarded in the state of Connecticut. Amer. J. ment. Defic., 1958, 62, 792-802.

APPENDIX

DEFINITION OF CRITERION VARIABLES

1. Residence (Subject Interview, rated on five-point scale): Had the subject achieved independence of residence; or did he live with relatives or in a half-way house?
2. Spare Time Activities (Subject Interview, rated on five-point scale): How desirable were the spare time activities in which the subject engaged?
3. Music Enjoyment (Subject Interview, rated on five-point scale): Did the subject enjoy music; if so, to what degree?
4. Law Conformity (Subject, Parent, and Employer Interview, rated on five-point scale): Had there been any law violations; if so, were they of a serious nature?
5. Driver's License (Subject Interview, rated on five-point scale): Did the subject possess a driver's license; if so, what type? If not, did he plan to obtain one?
6. Credit Rating (Subject and Parent Interview and Local Credit Bureau, rated on five-point scale): Had the subject used credit; if so, had he used it in a desirable manner?
7. Improved Financial State (Subject Interview, rated on five-point scale): Had the respondent's financial state improved in the last two years or had it deteriorated?

8. **Purchases Own Clothing** (Subject Interview, rated on five-point scale): Was the subject financially responsible for purchases of clothing and other personal items?

9. **Job Expectancy** (Subject Interview): How many years did the subject expect to remain on his present job?

10. **Regard for Supervisor** (Subject Interview, rated on five-point scale): How did the subject rate the treatment accorded him by his supervisor?

11. **Compatible Employees** (Subject Interview, rated on five-point scale): What was the subject's opinion concerning the congeniality of people with whom he worked?

12. **Realistic Goals** (Subject Interview, rated on five-point scale): Does the present job coincide with the type of employment the subject desires? If not, in what type of work did he desire employment?

13. **Advancement Possibility** (Subject Interview, rated on five-point scale): What was the subject's opinion concerning his chances for advancement to a better job?

14. **Trained for Present Job** (Subject Interview, rated on five-point scale): Was prior training received for the particular job now held?

15. **Exercises Right to Vote** (Subject Interview, rated on five-point scale): Did the subject vote regularly?

16. **Finances from Parents** (Subject Interview, rated on five-point scale): To what degree did the subject depend on his parents for financial support?
17. **Parents Regard as Mature** (Subject Interview, rated on five-point scale): In the subject's opinion did his parents treat him as though he were a mature person?
18. **Self-Assurance** (Parent Interview, rated on five-point scale): Did the subject possess self-assurance? If so, to what degree?
19. **Skill with Finances** (Parent Interview, rated on five-point scale): Did the subject handle his money in a responsible manner?
20. **Education Aided Success** (Parent Interview, rated on five-point scale): Did son's schooling make him more successful than he would have been without it?
21. **Respects Authority** (Parent Interview, rated on five-point scale): Was the son respectful to persons in authority?
22. **Follows Orders Willingly** (Parent Interview, rated on five-point scale): Did the son carry out orders willingly?
23. **Meets New People** (Parent Interview, rated on five-point scale): Did the son enjoy meeting new people?
24. **Maintains Friendships** (Parent Interview, rated on five-point scale): Did the son have friends; if so, approximately how many?

25. **Mature Manner with Girls** (Parent Interview, rated on five-point scale): Did the son handle contacts with girls and women in a desirable manner?

26. **Leadership Ability** (Parent Interview, rated on five-point scale): Was the son a leader in his group?

27. **Dependability of Son** (Parent Interview, rated on five-point scale): Did these parents find the son as dependable as they did other adults?

28. **Son Requires Assistance** (Parent Interview, rated on five-point scale): In what way did the son require parental help?

29. **Desire More Independence** (Parent Interview, rated on five-point scale): Did the son desire more independence than his parents accorded?

30. **Source of Pleasure** (Parent Interview, rated on five-point scale): What did the son do that gave him the most pleasure? Rating was made on the desirability of the activity.

31. **Source of Trouble** (Parent Interview, rated on five-point scale): What did the son do that caused him the most trouble? Rating was made on the seriousness of the activity.

32. **Aid from Social Agencies** (Parent Interview, rated on five-point scale): Did the subject receive financial assistance from social agencies?

33. **Satisfied with Son's Job** (Parent Interview, rated on five-point scale): Were the parents pleased or satisfied with the son's job?

34. **Reason Jobs Terminated** (Parent Interview, rated on five-point scale): Had the subject experienced job termination in the past two years; if so, was the reason for the termination an acceptable one?

35. **Enjoy Job Responsibility** (Parent Interview, rated on five-point scale): Did the son enjoy the responsibility associated with his job?

36. **Initiates Activity** (Parent Interview, rated on five-point scale): Was the son quick to initiate activity, i.e., did he see things to do or did he wait to be told?

37. **Physical Health and Stamina** (Employer Interview, rated on five-point scale): Was the employee strong and healthy?

38. **Performance under Pressure** (Employer Interview, rated on five-point scale): How did the employee perform when under pressure?

39. **Handles Company Money** (Employer Interview, rated on five-point scale): Did the job require the handling of company money? If so, was this person successful in the handling of it?

40. **Trained for Present Job** (Employer Interview, rated on five-point scale): Did training prepare the employee for this job, or was training after employment necessary?

41. **High Performance Level** (Employer Interview, rated on five-point scale): Was job performance at the highest level of which the employee was capable?

42. Sacrifices Leisure (Employer Interview, rated on five-point scale): Was this person prepared to sacrifice leisure time for job requirements?

43. Consistent Worker (Employer Interview, rated on five-point scale): Was the employee found to be a steady and consistent worker?

44. Neatness (Employer Interview, rated on five-point scale): Did this employee keep his work area neat and clean?

45. Accepts Responsibility (Employer Interview, rated on five-point scale): Was the employee always ready to assume responsibility or was he afraid of responsibility?

46. Enjoys Helping Others (Employer Interview, rated on five-point scale): Did this person willingly assist other employees?

47. Obeys Orders Willingly (Employer Interview, rated on five-point scale): Did the employee obey orders and instructions willingly?

48. Relates to Employees (Employer Interview, rated on five-point scale): Did this person maintain amicable relations with fellow employees?

49. Careful on Job (Employer Interview, rated on five-point scale): Was the employee careful on the job, or was he impetuous and careless?

50. Proceeds Independently (Employer Interview, rated on five-point scale): Did the employee see things to do and proceed to do them without waiting to be told?

51. Job Attendance (Employer Interview, rated on five-point scale): Was this person absent from work; if so, how often?

52. Punctuality (Employer Interview, rated on five-point scale): To what degree was the employee punctual?

53. Politeness to Customers (Employer Interview, rated on five-point scale): Was the employee polite to customers (public)?

54. Makes Usable Suggestions (Employer Interview, rated on five-point scale): Did the employee advance good suggestions?

55. Safety Conscious (Employer Interview, rated on five-point scale): Did the employee observe general rules of safety?

56. Cares for Property (Employer Interview, rated on five-point scale): Did the employee care for property and work materials in a desirable manner?

57. Evaluation of Employee (Employer Interview, rated on five-point scale): What was the employer's evaluation of the employee for the job he held?

58. Job Happiness (Subject's Response to Item 1 on Job Satisfaction Inventory): Subject's like or dislike for his job was rated on a five-point scale.

59. Job Contentment (Subject's Response to Item 2 on Job Satisfaction Inventory): Subject rated his feelings of satisfaction or dissatisfaction with his job on a five-point scale.

60. Job Satisfaction (Subject's Response to Item 3 on Job Satisfaction Inventory): Subject's response to the portion of time he experienced job satisfaction was entered on a five-point rating scale.

61. Past Residences (Subject Interview): How many places had the subject lived in the past three years?

62. Hours Spent Viewing TV (Subject Interview): What was the average hours per week spent by the subject viewing TV?

63. Days Outdoor Recreation (Subject Interview): How many days a month did the subject take part in outdoor recreation?

64. Movie Attendance (Subject Interview): How many times a month did the subject attend movies?

65. Time Spent Reading (Subject Interview): What was the average number of hours spent in reading each week by the subject?

66. Amount of Savings (Subject Interview): What was the amount of this person's savings?

67. Amount of Indebtedness (Subject Interview): What was the amount of the subject's indebtedness?

68. Number of Close Friends (Subject Interview): How many persons did the subject consider to be his close friends?

69. Training-to-Job-Interval (Subject Interview): What was the length of time between completion of habilitation training and first employment?

70. Average Job Tenure (Subject, Parent, and Employer Interview): What was the average length of employment on jobs the subject

had held since completion of habilitation training or, if he received no habilitation training, for jobs held since he was 18 years of age?

71. Hourly Earnings (Subject, Parent, and Employer Interview): What were the subject's average hourly earnings on jobs held since completion of habilitation training or, if there was no habilitation training, on jobs held since the subject was 18 years of age? Accuracy of the subject's statements were checked against responses from parents and employer.

72. Annual Earnings (Subject, Parent, and Employer Interview): What were the subject's annual earnings during the year immediately preceeding the interview? Accuracy of subject's statement was checked against responses from parents and employer.

73. Hours Spend in Meetings (Subject Interview): How many hours a week did the subject spend in meetings (clubs, lodges, and unions)?

74. Days Spent with Parents (Subject Interview): How many days per month was the subject with his parents?

75. Hours Worked with Parents (Subject Interview): How many hours per week did the subject work, either on the job or in home maintenance, with his parents?

76. Hours in Church Activity (Parent Interview): How many hours a month did the subject spend in church activities?

77. Hours Helping at Home (Parent Interview): How many hours per week did the subject spend helping with household work?

78. Hours Employed per Week (Employer Interview): How many hours did this employee work per week?

79. Number of Dependents (Employer Interview): How many dependents were listed on the employee's withholding statement?

80. Job Unhappiness (Subject's Response to Item 4 on Job Satisfaction Inventory): What things had caused the subject to be unhappy with his job during the past two months?

DICHOTOMOUS CRITERION VARIABLES

Answers to questions concerned with information for dichotomous variables earned a rating of "1," if the answer was in the affirmative, a rating of "0" if the answer was negative.

1. Was leisure spent with peers? (Subject Interview)
2. Was leisure spent with relatives? (Subject Interview)
3. Was leisure spent with younger friends? (Subject Interview)
4. Was leisure spent with older friends? (Subject Interview)
5. Was leisure spent with parents? (Subject Interview)
6. Was leisure spent alone? (Subject Interview)
7. Had subject done credit buying? (Subject Interview)
8. Did subject always include friends in leisure activities? (Subject Interview)
9. Did subject include friends most of the time in leisure activities? (Subject Interview)

10. Did subject include friends part of the time in leisure activities? (Subject Interview)

11. Did subject seldom include friends in leisure activities? (Subject Interview)

12. Did subject very seldom include friends in leisure activities? (Subject Interview)

13. Was the subject's job secured solely through his own efforts? (Subject Interview)

14. Was subject's job secured through an employment agency? (Subject Interview)

15. Was subject's job secured through Vocational Rehabilitation services? (Subject Interview)

16. Was subject's job obtained through the school counselor or half-way house supervisor? (Subject Interview)

17. Was subject's job obtained through members of his family? (Subject Interview)

18. Was the subject's job classified as skilled employment? (Subject Interview and classification given job by Dictionary of Occupational Titles) (U. S. Dept. of Labor, 1939)

19. Was the subject's job classified as semi-skilled employment? (Subject Interview and classification given job by Dictionary of Occupational Titles) (U. S. Dept. of Labor, 1939)

20. Was the subject's job classified as unskilled employment? (Subject Interview and classification given job by Dictionary of Occupational Titles) (U. S. Dept. of Labor, 1939)

21. Was the subject employed at the time of the interview? (Subject Interview)

22. Was greatest happiness derived from work? (Subject Interview)

23. Was greatest happiness derived from spare time? (Subject Interview)

24. Was greatest happiness derived from being with family? (Subject Interview)

25. Was greatest happiness derived from being with close friends? (Subject Interview)

26. Was greatest happiness derived from civic activities? (Subject Interview)

27. Was next greatest happiness derived from work? (Subject Interview)

28. Was next greatest happiness derived from leisure activities? (Subject Interview)

29. Was next greatest happiness derived from being with family? (Subject Interview)

30. Was next greatest happiness derived from being with close friends? (Subject Interview)

31. Was next greatest happiness derived from civic activities? (Subject Interview)

32. Was the subject married at the time of the interview? (Subject Interview)

33. Was the subject engaged at the time of the interview? (Subject Interview)

34. Was the subject single at the time of the interview? (Subject Interview)

35. Was the subject separated from his wife at the time of the interview? (Subject Interview)

36. Was the subject divorced at the time of the interview? (Subject Interview)

37. Did the subject and his wife share all of their leisure hours? (Subject Interview)

38. Did the subject and his wife share at least half of their leisure hours? (Subject Interview)

39. Did the subject and his wife rarely share their leisure hours? (Subject Interview)

40. Were most of the son's friendships with persons his own age? (Parent Interview)

41. Were most of the son's friendships with persons younger than he? (Parent Interview)

42. Were most of the son's friendships with brothers and sisters? (Parent Interview)

43. Were most of the son's friendships with older persons? (Parent Interview)

44. Did parents also assume the role of friend with their son? (Parent Interview)

45. Did the son take a vacation the year preceeding the interview? (Parent Interview)

46. Were the son's leisure activities never separate from the family? (Parent Interview)

47. Were the son's leisure activities seldom separate from the family? (Parent Interview)

48. Were the son's leisure activities separate from the family part of the time? (Parent Interview)

49. Were the son's leisure activities usually separate from the family? (Parent Interview)

50. Were the son's leisure activities always separate from the family? (Parent Interview)

51. Was this person working for a company which had 50 or more employees? (Employer Interview)

52. Was this person working for a company which had between 25 and 50 employees? (Employer Interview)

53. Was this person working for a company which had between 5 and 25 employees? (Employer Interview)

54. Was this person working for an employer who had between one and five employees? (Employer Interview)

55. Was this person the sole employee? (Employer Interview)

56. Was this person covered by accident and/or life insurance? (Employer Interview)

57. Was this person substantially employed, i.e., was he employed at least eleven of the past twelve months? (Subject, Parent, and Employer Interview)

58. Was this person unsubstantially employed, i.e., was he employed not less than five months or more than ten months during the past year? (Subject, Parent, and Employer Interview)

59. Was this person minimally employed, i.e., was he totally unemployed for more than seven months during the past year? (Subject, Parent, and Employer Interview)

60. Was this person unemployed, i.e., he had not worked during the past year, but he had actively sought employment? (Subject, Parent, and Employer Interview)

61. Was this person resistant to employment, i.e., had not sought jobs nor had he accepted them when offered to him during the past year? (Subject, Parent, and Employer Interview)

DEFINITION OF PREDICTOR VARIABLES

1. Mental Health: A numerical rating which represented the total score earned by the subject from responses to items on Bown's Self-Report Inventory provided an estimate of mental health.
2. Physical Health (Subject Interview, rated on five-point scale): What was the state of the subject's health?
3. Frequency of Medication (Subject Interview, rated on five-point scale): How frequently did the subject require medication?

4. Enjoyed School (Subject Interview, rated on five-point scale): Did the subject enjoy or like his years of schooling?
5. Reason Left Home (Subject Interview, rated on five-point scale): Why did the subject leave home (if he had)? Did he leave to receive training or a job? Were his parent's divorced or deceased? Were his parents unable to provide for him? Did the state assume custody? Did he leave because of his own wishes and desires?
6. Optimum Performance (Parent Interview, rated on five-point scale): Did the subject perform at an optimum level?
7. Emotional Stability (Parent Interview, rated on five-point scale): Did the son become upset easily?
8. Cheerfulness (Parent Interview, rated on five-point scale): Was the son usually in a good mood?
9. Adaptability (Parent Interview, rated on five-point scale): Did the son adapt with ease to changes in routine?
10. Stability of Family: After interviews with subject and parents were completed the interviewer rated the internal stability of the subject's family on a five-point scale. The rating was based, not on present stability alone, but on family stability throughout the subject's lifetime.
11. Perceptual Awareness (Interpersonal Impressions Rating Scale--Interviewer rated subject on seven-point scale): Did the subject possess open, perceptual awareness, or did he exhibit constricted, defensive denial?

12. **Definite Convictions (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did the subject speak with definite conviction, or were his opinions tentative and vague?**

13. **Recognizes Limitations (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did the subject appear to be aware of his mental limitations, or did he appear to be unaware of his inabilities?**

14. **Written Communication (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Was writing done spontaneously and was spelling intelligible, or was writing restricted to signature and was the spelling unintelligible?**

15. **Self-Esteem (Interpersonal Impressions Rating Scale -- Interviewer rated subject on seven-point scale): Did the subject exhibit high self-esteem, or did he appear to be ashamed and self-castigating?**

16. **Responsibility (Interpersonal Impressions Rating Scale -- Interviewer rated subject on seven-point scale): Did this person accept personal responsibility, or did he tend to be evasive and project blame?**

17. **Psychosexual Integration (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did the subject possess desirable sex-role identification as**

well as a desirable mental attitude toward sex, or was there evidence of psychosexual repression or diffusion?

18. Grooming (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did this person present a clean, well-dressed appearance, or was he untidy, improperly dressed, and/or dirty?

19. Dominant (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did the subject appear to be dominant, confident, and leading; or was he submissive, weak, and conforming?

20. Sociability (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Was this person sociable, outgoing, and at ease, or was he withdrawn, retiring, and/or isolated?

21. Affectionate, Kind (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Was the subject's relationship with others one of warmth, affection, and kindness; or was he cold, hostile, and critical?

22. Positive re Father (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did the subject possess a predominately positive or predominately negative attitude toward his father?

23. Positive re Mother (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Was the subject's attitude toward his mother predominately positive or negative?

24. Positive re Men (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Was the subject's attitude toward men predominately positive or negative?
25. Positive re Women (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Was the subject's attitude toward women predominately positive or negative?
26. Positive re Children (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Was the subject's attitude toward children predominately positive or negative?
27. Cooperative (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Were there indications that the subject cooperated well, or did he exhibit a total disregard for others?
28. Persistent (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did this person exhibit persistence and tenacity, or did he appear to be a person who quit easily and was inclined to be lazy?
29. Strives for Success (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Was there an active striving to obtain good results, or only the degree of striving necessary to avoid failure?

30. **Handles Failures Well (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did the subject react to failure realistically, or did he become withdrawn, hostile, and/or denying?**

31. **Self-Directing (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did information and observations gathered on this person indicate he was self-directing and responsible; or was he drifting and unreliable?**

32. **Motivated by Difficulty (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did difficult tasks serve as a challenge to this person, or did he prefer easy tasks?**

33. **Responds Readily (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did the subject respond readily to directions or suggestions, or was urging required?**

34. **Maximum Performance (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did this person's performance approach his maximum potential, or did he perform much below potential?**

35. **Amoral Character (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did the subject's character development appear to be at a minimal or amoral level with no feeling of remorse for undesirable acts?**

36. Expedient Character (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Was this a person who failed to perceive the long-range results of his behavior, and did he possess few moral inner directives?

37. Conforming Character (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did this person consent to the dictates of his associates in an uncensorious manner?

38. Conscientious Character (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did the subject's behavior appear to consist of strongly organized "dont's" which determined his unswerving life style?

39. Altruistic Character (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Was this a person who was concerned over the well-being of others as well as of himself, and did he maintain rational control of his actions?

40. Integrated Personality (Interpersonal Impressions Rating Scale-- Interviewer rated subject on seven-point scale): Did this person exhibit excellent mental health and personality integration, or was there evidence of personality disturbance and poor mental health?

41. Enjoyment of Life (Subject's Response to Item 1 on General Satisfaction Inventory): The subject's statement concerning

the degree of happiness he achieved from life was rated on a five-point scale.

42. General Happiness (Subject's Response to Item 2 on General Satisfaction Inventory): The subject rated his happiness, as compared with others of his sex and age, on a five-point scale.

43. Degree of Contentment (Subject's Response to Item 3 on General Satisfaction Inventory): Subject's statement concerning the portion of the time he experienced happiness was rated on a five-point scale.

44. Age (Subject Interview): Chronological age of subject at the time of the interview was entered on the data sheet.

45. Past Places Lived: (Subject Interview): The number of places where the subject had resided during the past three years was listed as data.

46. Weight (Subject Interview): Information was supplied by the subject concerning his weight at the time of the interview.

47. Height (Subject Interview): Information was supplied by the subject concerning his height at the time of the interview.

48. Illnesses and Accidents (Subject Interview): A listing and simple tabulation was made of serious illnesses, operations, or accidents the subject had experienced during his life.

49. Years Schooling (Subject Interview): The subject supplied information concerning the number of years he had attended school.

50. Years Job Training (Subject Interview): The subject stated the number of years of job training he had received.

51. Age Left Home (Subject Interview): What was the chronological age of the subject when he first left home to establish residence elsewhere?

52. Number of Handicaps (Subject Interview): What were the number of physical handicaps possessed by the subject?

53. IQ (Stanford-Binet, Revised or WISC): An individual intelligence test was administered to the subject to determine his level of intellectual functioning.

54. Lack of Anxiety: Score on the Castaneda-McCandless Anxiety Scale as adapted by Lipman and Belver determined the subject's lack of anxiety.

55. Truthfulness: Score on veracity or truthfulness was determined by the subject's answers to items on the Lie Scale, a subtest of the Castaneda Manifest Anxiety Scale.

56. Range of Attention: Scores on items one through three for each of the five paragraphs comprising the Listening Test of Vocational Aptitude afforded a measure of the subject's range of attention or listening ability.

57. Applies Reasoning: The score on the reasoning items for each of the five paragraphs which comprised the Listening Test of Vocational Aptitude afforded a measure of the subject's ability to apply reasoning to practical problem situations.

58. Reaction Time: The subject's score on the test, Discrimination Reaction Time,afforded a measure of the subject's ability to discriminate and react to perceived stimuli.

59. Psychomotor Speed: The subject's score on Dotting afforded a measure of his motor coordination and speed of arm and finger movements.

60. Verbal Facility: A measure of the subject's word fluency and/or verbal facility was obtained from his performance on the test, Rhymes.

61. Unhappiness (Subject's response to Item 4 on General Satisfaction Inventory): During the past two months what things had caused the subject's unhappiness?

62. Creative Fluency score was obtained by scoring Alternate Uses for fluency in divergent thinking, i.e., a counting-up of responses given for each item in the test of creativity.

63. Creative Flexibility, another subscore for Alternate Uses indicated the subject's ability to achieve a shift in thought pattern.

64. Creative Frequency score was obtained by scoring responses to items on Alternate Uses for their statistical infrequency or originality.

65. Practical Creativity score was obtained by scoring responses to items on Alternate Uses for their practical or creative value.

66. Creative Elaboration score for Alternate Uses responses afforded a measure of the elaboration, or expression of details, in responses which was held to be indicative of completeness of thought.

67. Draw-A-Man Mental Health: A drawing of a man by the subject was utilized as a projective technique and was scored for mental health.

68. Parents' Activities (Parent Interview): In how many civic activities did the parents of the subject participate?

69. Index of Social Class: Information obtained during parent interview and from interviewer's observations supplied information necessary to estimate the social class of the subject's parents.

70. Family Dynamics: Items from Peck's Sentence Completion, a projective technique, which pertained to family dynamics were rated on a five-point scale to determine the subject's attitude toward his family.

71. Attitude, Job and Employer: Responses to Peck's Sentence Completion which revealed the subject's attitude toward jobs and employers were rated on a five-point scale; from these ratings a score was derived.

72. Interpersonal Development: A score on social or interpersonal development of the subject was obtained from his responses to items on Peck's Sentence Completion which elicited information concerning attitudes towards others.

73. Need Achievement: Responses to Peck's Sentence Completion were scored for motivation or need achievement. Items were rated on a five-point scale.

74. Self-Concept: Self-image or ego strength of the subject was determined by his responses to items on Peck's Sentence Completion. Responses were rated on a five-point scale.

75. Self Direction: A subscore on Vineland Social Maturity Scale provided a measure of self-direction.

76. Occupational Maturity: A subscore on Vineland Social Maturity Scale provided a measure of occupational maturity.

77. Communicative Maturity: A subscore from Vineland Social Maturity Scale provided a measure of communicative maturity.

78. Social Maturity: A subscore from Vineland Social Maturity Scale provided a measure of social maturity.

DICHOTOMOUS PREDICTOR VARIABLES

Answers to questions designed to obtain information on dichotomous variables earned a rating of "1" if the answer was in the affirmative, a rating of "0" if the answer was negative.

1. Descent-Anglo (Subject Interview): Information was obtained from the subject concerning his descent.

2. Descent-Latin (Subject Interview): Information supplied by the subject determined if he were Latin-American.

3. **Endogenous** (Parent Interview): Information was obtained from the parent concerning the nature of the subject's retardation.
4. **Exogenous** (Parent Interview): Whether or not the subject's retardation was the result of central nervous system involvement was determined by information supplied by his parents.
5. **Change-Making Ability**: A response to one item on the **Listening Test of Vocational Aptitude** afforded a measure of the subject's ability to make change for amounts less than one dollar.
6. **Works Well with Women**: An item on the **Listening Test of Vocational Aptitude** was designed and scored to afford a measure of the subject's ability to maintain a businesslike manner with girls and women.
7. **From Broken Home** (Subject and Parent Interview): Information supplied by the subject and his parents determined if he were from a broken home. A broken home was a home in which (1) one or both of the parents were deceased, (2) the parents were divorced, or (3) due to environmental factors the State had assumed custody of the subject.